



## United States Department of the Interior



### BUREAU OF LAND MANAGEMENT

Southern Nevada District Office

Las Vegas Field Office

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Las Vegas, NV 89130

<http://www.blm.gov/nv/st/en/fo/lvfo.1.html>

In Reply Refer to:  
N-87355 et al.  
2800 (NVS0056)

SEP 24 2009

Dear Interested Parties:

Enclosed for your review and comment is the Bureau of Land Management, Las Vegas Field Office, Environmental Assessment (EA) for the Nevada Power Company d/b/a NV Energy Goodsprings Energy Recovery Station and a draft of the Finding of No Significant Impact (FONSI). This document analyzes the potential impacts associated with the construction, operation and maintenance of an energy recovery power generation plant and associated facilities.

Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

Comments concerning the EA and draft FONSI for the Nevada Power Company d/b/a NV Energy Goodsprings Energy Recovery Station will be accepted through October 23, 2009. Please submit your comments to Ms. Beth Ransel, Program Manager, PPT, at the address above. For more information regarding this action, please contact Ms. Ransel at (702) 515-5089.

Sincerely,

Kimber Liebhauser  
Assistant Field Manager  
Division of Lands

Enclosures

**DRAFT FINDING OF NO SIGNIFICANT IMPACT**  
**For**  
**Nevada Power Company d/b/a NV Energy**  
**Goodsprings Energy Recovery Station**  
**DOI-BLM-NV-S010-2009-0251-EA**  
**Case Files N-87355 et al.**

**Finding of No Significant Impact:**

I have reviewed Environmental Assessment (EA) DOI-BLM-NV-S010-2009-0251-EA dated September 2009. After consideration of the environmental effects as described in the EA, and incorporated herein, I have determined that the proposed action identified in the EA will not significantly affect the quality of the human environment and that an Environmental Impact Statement (EIS) is not required to be prepared.

I have determined the proposed action is in conformance with the approved Las Vegas Resource Management Plan, and is consistent with applicable plans and policies of county, state, tribal and federal agencies. This finding and conclusion is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts described in the EA.

**Context:**

The proposed action is located near Goodsprings, Nevada, immediately adjacent to the existing Kern River Natural Gas Compressor Station. New disturbance associated with the proposed action is located primarily within an existing authorized right-of-way issued to Kern River Natural Gas Company, a portion of which will be relinquished upon authorization of the proposed action to NV Energy.

**Intensity:**

- 1) *Impacts that may be both beneficial and adverse.*

As described in the EA, there would be minor adverse impacts to vegetation, wildlife, and special status species. There would be short-term adverse impacts to air quality. There would be no impact to cultural resources.

- 2) *The degree to which the proposed action affects public health or safety.*

There were no public health and safety issues identified during preparation of the EA, agency consultation, or the public review period that would be affected by the selected action.

- 3) *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

As described in the EA, historic and cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers and ecologically critical areas would not be affected by the selected action.

- 4) *The degree to which the effects on the quality of the human environment are likely to be controversial.*

There were no highly controversial impacts identified during preparation of the EA, agency consultation, or the public review period.

- 5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

There were no highly uncertain, unique, or unknown risks identified during the preparation of the EA, agency consultation, or the public review period. The potential impacts are well defined and analyzed in the EA. Ground disturbing activities present the possibility of unearthing cultural resources. If cultural resources are discovered, the BLM Archeologist will be notified promptly and the BLM will consult with the Nevada State Historic Preservation Officer as required.

- 6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*

Implementation of the selected action neither establishes a BLM precedent for future actions with significant effects, nor represents a decision in principle about a future consideration.

- 7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

A cumulative analysis was completed for affected resource analyzed in the EA. Past actions in the area of analysis that could contribute to cumulative impacts include the Kern River natural gas pipeline and compressor station, a 12 kV distribution line, a 69 kV transmission line, a 230 kV transmission line, and State Highway 161. Reasonably foreseeable future actions are limited to the Yellow Pine Rail Trail, solar energy projects, and wind energy projects.

Implementation of the selected action combined with past, present, and reasonably foreseeable future actions will have minor cumulative impacts to air quality, vegetation and wildlife, and visual resources which would not reach a level of significance.

- 8) *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources.*

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties. For the purposes of Section 106, historic properties are defined as those that are listed in or eligible for nomination to the National Register of Historic Places (NRHP).

Efforts to identify and evaluate cultural resource properties for this undertaking according to 36 CFR 800.4 included evaluation of the results of an existing data review. The footprint of the existing compressor station and several portions of the distribution line to the Kern River Compressor Station have been evaluated for cultural resources. Initial construction of the line, however, has disturbed the surface to the extent that the probability of finding intact cultural deposits is negligible; therefore, the BLM Archaeologist has determined that those portions

previously unevaluated are exempt from Section 106 review as set forth in Section VII.A.2 of the State Protocol Agreement with the Nevada State Historic Preservation Office (SHPO). There are no historic properties within the APE for this project; no further evaluation is required. The project as proposed will have “no effect” to historic properties.

9) *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA of 1973.*

The selected action was evaluated for potential impacts to desert tortoise. Adverse impacts to desert tortoise would be reduced to minor levels with the implementation of mitigation measures the BLM has identified and included as part of the proposed action.

10) *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*

The proposed action will not threaten to violate any Federal, State or local law or requirements imposed for the protection of the environment. All required permits will be acquired prior to project activities commencing.

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Kimber Liebhauser  
Assistant Field Manager  
Division of Lands

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Date

**U.S. Department of the Interior  
Bureau of Land Management**

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**Environmental Assessment  
DOI-BLM-NV-S010-2009-0251**

**September 2009**

**Nevada Power Company d/b/a NV Energy  
Goodsprings Energy Recovery Station**

APPLICANT

Nevada Power Company d/b/a NV Energy

GENERAL LOCATION

Near Goodsprings, Nevada  
South of State Route 161

BLM CASE FILE SERIAL NUMBER(S)

NEV-55838/G/  
N-54236/C/  
N-54236-01  
N-42581  
N-87355  
N-87355-01

PREPARING OFFICE

U.S. Department of the Interior  
Bureau of Land Management  
Las Vegas Field Office  
Phone: (702) 515-5089



## **BLM Mission Statement**

*It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.*

**DOI-BLM-NV-S010-2009-0251**

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Appendix C Visual Rating Contrast Sheets and Visual Simulation

## Acronyms and Abbreviations

AAQS	Ambient Air Quality Standards
APE	Area of Potential Effect
BLM	Bureau of Land Management
BMP	Best Management Practices
CEQ	Council of Environmental Quality
CCRFCDD	Clark County Regional Flood Control District
DAQEM	Department of Air Quality & Environmental Management
EA	Environmental Assessment
EPA	United States Environmental Protection Agency
FLPMA	Federal Land Policy and Management Act
°F	Fahrenheit
GPS	Global Positioning System
kV	Kilovolt
LSTS	Large Scale Translocation Site
MBTA	Migratory Bird Treaty Act
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NRCS	Natural Resources Conservation Service
NDEP	Nevada Division of Environmental Protection
NEPA	National Environmental Policy Act
NNHP	Nevada Natural Heritage Program
NRHP	National Register of Historic Places
NRS	Nevada Revised Statute
OEC	Ormat Energy Converter
OSHA	Occupational Safety and Health Administration
PFYC	Potential Fossil Yield Classification

PM <sub>2.5</sub>	Particulate matter with mean aerometric diameter smaller than 2.5 microns
PM <sub>10</sub>	Particulate matter with mean aerometric diameter smaller than 10 microns
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-way
RMP	Las Vegas Resource Management Plan
RPS	Renewable Portfolio Standard
SPCC	Spill Prevention, Control and Countermeasure Plan
SWPPP	Storm Water Pollution Prevention Plan
USFWS	United States Fish & Wildlife Service
VOC	Volatile Organic Compound
VRU	Vapor Recovery Unit
WHOH	Waste Heat Oil Heater

## **1 INTRODUCTION**

Nevada Power Company, doing business as NV Energy, proposes to construct a 6 megawatt (MW) waste heat recovery generation facility near Goodsprings, Nevada approximately 20 miles south of the Las Vegas Valley (see **Figure 1-1**). The proposed Project, referred to as NV Energy's Goodsprings Energy Recovery Station, involves recovering waste heat from an existing heat source to generate electricity using an energy converter. Per Nevada Revised Statute (NRS), the proposed Project is defined as a renewable energy generation project (NRS 701.080).

The proposed Project includes a new energy recovery generation plant as a compatible use facility on federally managed public land overlying an existing Kern River Gas Compressor Station right-of-way (ROW). The Kern River Station gas compressor turbine exhaust would be the source of the waste heat to be recovered and used for the proposed Project. The energy generated by the proposed Project would interconnect with an existing overhead distribution line approximately 250 feet west of the new generating plant (see **Figure 1-1**).

All facilities of the proposed Project would be permitted by NV Energy in coordination with Ormat and the Kern River Gas Transmission Company. Ormat would design and construct the generation components of this new facility for NV Energy. The in-service date for the proposed Project is estimated to be November 2010 or earlier depending on permit acquisition timeframes.

### **1.1 Applicant's Underlying Purpose and Need**

The Energy Policy Act of 2005 encourages the development of renewable energy resources throughout the United States. As well, the State of Nevada has established a Renewable Portfolio Standard (RPS) that all public utilities, including NV Energy, must meet by investing in, and partnering with, commercial project developers to purchase renewable generated power, participate in turnkey projects and/or co-development of renewable projects. This standard mandates 12 percent of retail sales come from renewable resources in 2009-2010, 15 percent in 2011-2012, 18 percent in 2013-2014, 20 percent in 2015-2019, 22 percent in 2020-2024 and 25 percent by 2025.

Additionally, the Public Utilities Commission of Nevada and the Federal Energy Regulatory Commission have set forth certain business and regulatory requirements dealing with renewable energy that NV Energy must meet. The proposed Project would serve to help meet the RPS and the business and regulatory requirements.

### **1.2 Need for Agency Action**

NV Energy has submitted applications for new and amended ROWs and short term ROWs for construction activities to the Bureau of Land Management (BLM) under the authority of the Federal Land Policy and Management Act of October 21, 1976, as amended. In accordance with the regulations found at 43 CFR 2800, the BLM will make a decision to approve or deny these right-of-way applications, wholly or in part, as analyzed in the alternatives contained within this document.

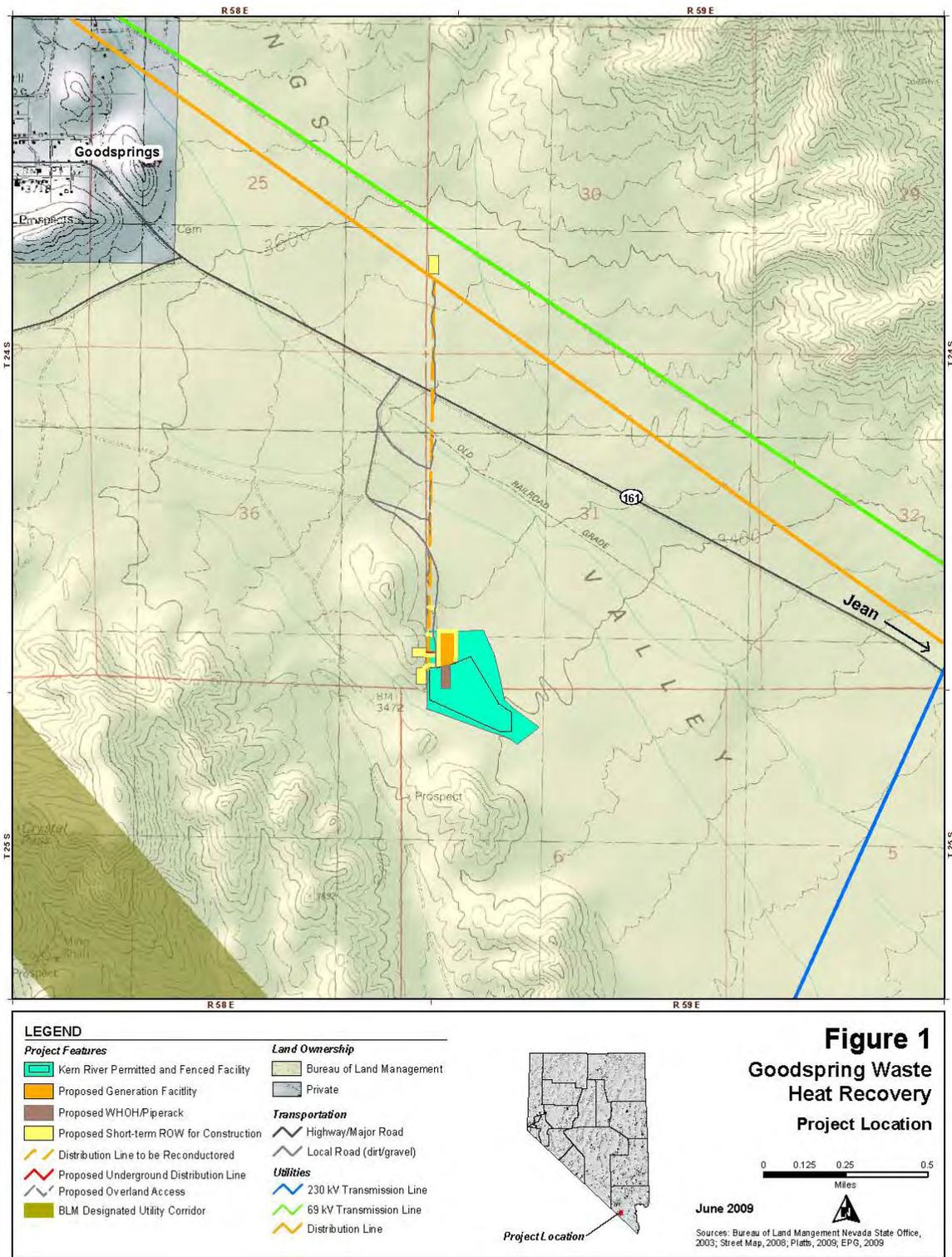


Figure 1-1 Project Location

**1.3 Conformance with Resource Management Plan**

The Proposed Action is subject to the BLM Las Vegas Resource Management Plan (RMP), approved by Record of Decision on October 5, 1998. The RMP has been reviewed and it is determined the proposed Project conforms with adopted management objectives (RW-1 and RW-1-h) and directions as summarized in the RMP and the Record of Decision under the authority of the Federal Land Policy and Management Act (FLPMA) of October 21, 1976, as amended (43 U.S.C. 1761 et.seq.).

**1.4 Relationship to Statutes, Regulations, and Other Plans**

This Environmental Assessment (EA) was prepared in compliance with Council for Environmental Quality (CEQ) Regulations for implementing the National Environmental Policy Act (NEPA) (40 CFR § 1500-1508), and all applicable regulations and laws passed subsequent to the passage of NEPA, and stipulations and format outlined in the BLM NEPA Handbook (H-1790-1).

**Table 1-1** presents the federal, state, and local agencies approvals, reviews, and permitting requirements anticipated to be needed for the proposed Project.

<b>Table 1-1 Authorizations, Permits, Reviews, and Approvals</b>			
<b>Action Requiring Permit, Approval, or Review</b>	<b>Permit/Approval or Review</b>	<b>Accepting Authority / Approving Agency</b>	<b>Statutory Reference</b>
<b>Federal</b>			
Application for New, Amended and Short-Term Rights-of-Way Over Land Under Federal Management	Rights-of-Way Grant Right-of-Way Amendment Short-term Rights-of-Way	BLM	FLPMA 1976 (PL94-579) USC 1761-1771 and 43 CFR 2800
National Environmental Policy Act (NEPA) Compliance to process Right-of-Way Application	Environmental Assessment and Decision Record	BLM	NEPA, 40 CFR Part 1500 et. seq.
National Historic Preservation Act Compliance to Process Rights-of-Way Application	Section 106 Compliance or Consultation	BLM /Nevada State Historic Preservation Office	National Historic Preservation Act of 1966, 36 CFR part 800, 16 USC 47
Federal Action on Land within Range of Species Listed under the Endangered Species Act	Determination and Biological Opinion Coverage	BLM / U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act Section 7 Consultation, 50 CFR Part 17, 16 USC 1536
Oil Pollution Prevention – Spill Prevention, Control and Countermeasure (SPCC) Plan	If total above-ground storage capacity of oil is greater than 1,320 gallons, then an SPCC is required.	U.S. Environmental Protection Agency (EPA) – Office of Emergency Services	40 CFR Part 112, and Section 311(j) of the Clean Water Act

<b>Table 1-1 Authorizations, Permits, Reviews, and Approvals</b>			
<b>Action Requiring Permit, Approval, or Review</b>	<b>Permit/Approval or Review</b>	<b>Accepting Authority / Approving Agency</b>	<b>Statutory Reference</b>
<b>State of Nevada</b>			
Construction Storm Water Discharge Permit	Construction Storm water General Permit (NVR 1000000)	Nevada Division of Environmental Protection (NDEP)	40 CFR § 122.26(b)(14)
Permit to Store, Use of Manufacture Hazardous Materials at a Facility	Hazardous Materials Storage Permit	State Fire Marshal	NAC 477.323
Use of a Highly Hazardous Substance	Chemical Accident Prevention Program / Authority to Construct and Permit to Operate	NDEP	NRS 459.380
<b>Local /Clark County</b>			
Construction and Operation	Special Use Permit ( <i>approved June 10, 2009</i> )	Clark County Board of Commissioners	Clark County Zoning Ordinance Title 30
Facility Emissions – Authority to Construct Permit and Operations Permit	Minor Source Operating Permits	Clark County Department of Air Quality and Environmental Management (DAQEM)	Clark County Air Quality Regulations
Emergency Diesel Generator Operation	Minor Source Operating Permit	Clark County DAQEM	Clark County Air Quality Regulations
Construction / Fugitive Dust – PM <sub>10</sub>	Dust Control Permit	Clark County DAQEM	Clark County Air Quality Regulations. Clean Air Act of 1977 and Amendments; NRS 321.001, 40 CFR Subpart C, 42 USC 7408, 42 USC 7409
Construction	Grading and Fencing	Clark County Building Department	Clark County Title 30

### **1.5 Scoping, Public Involvement, and Issues**

The project was scoped internally with the BLM interdisciplinary team on May 6, 2009. The following areas of concern were identified by BLM resource staff:

- The proposed Project is located within the Large Scale Translocation Site, an area where desert tortoises, a federally listed threatened species, have been released.
- The proposed Project is located within a Visual Resource Management Class II area.

These resource concerns were evaluated during preparation of this EA, and are described in Section 3.3.

NV Energy is required to obtain a Use Permit to ensure construction and operation of the proposed Project is consistent with county plans and zoning ordinances. Information about the project was presented to the Clark County Goodsprings Citizens Advisory Council on May 26, 2009. This meeting was properly noticed and posted at the following locations, in accordance with the Nevada Open Meeting Law:

- Goodsprings Community Center, 375 W. San Pedro Avenue, Goodsprings, NV
- Goodsprings Public Library, 375 W. San Pedro Avenue, Goodsprings, NV
- Goodsprings Township Justice Court, 23120 Las Vegas Blvd. South, Jean, NV
- Pioneer Saloon, 310 W. Spring Street, Goodsprings, NV
- Jean Post Office, 18500 Las Vegas Blvd. South, Jean, NV

Clark County Department of Comprehensive Planning approved the Use Permit (UC-0267-09) and issued a Notice of Final Action on June 10, 2009. The Staff recommended approval of the Use Permit based on the following analysis:

- The development is consistent in size, height, and color with the existing Kern River Natural Gas Compressor Facility;
- Harnessing waste heat created by the compressor turbines and converting it into electricity, fulfills Goal 23 of the South County Land Use Plan; and
- By locating adjacent to the Kern River site, and utilizing the same access road, the development fulfills Goal 25 and Policy 25.1 which encourages compatibility between utilities and existing land uses as well as joint use of corridors by utilities and service providers.

The EA and Draft FONSI will be made available for a 30-day public comment period. The Goodsprings Citizen's Advisory Council has expressed interest in projects in this area, so the EA and draft FONSI will be mailed to them for comments.

## PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action and the No Action Alternative. Due to the specialized needs of the proposed Project, utilization of waste heat from an existing source to generate electricity, no other viable alternatives in the vicinity of the proposed Project area were identified. Therefore, no other alternatives, other than the Proposed Action and the No Action alternative were considered.

Details regarding project facilities and design, construction, operation, and maintenance activities were provided to the BLM as part of the Applicant's Plan of Development and are incorporated in this chapter. The final plan of development for the project will be designed according to the application design codes and standards such as the National Fire Protection Association, the National Electrical Code and associated American National Standards Institute and Institute of Electrical and Electronic Engineers standards in addition to Occupational Safety and Health Administration (OSHA) requirements.

### **1.6 No Action**

The No Action alternative is required under NEPA and by CEQ regulation (40 CFR 1500-1508). Under the No Action Alternative, the BLM would not approve the applications for new, amended and short-term ROWs for construction activities and the facility would not be constructed.

### **1.7 Proposed Action**

The Proposed Action is for the BLM to authorize the ROWs for the construction, operation and maintenance of the Goodsprings Energy Recovery Station and associated facilities. NV Energy is requesting ROWs to include the new recovered heat generation components, new switchgear, an underground interconnection between the generator and the existing overhead Jean 12 kilovolt (kV) distribution line (N-54236), access to the site, associated telecommunication facilities (at the generation site and along an existing transmission line), and storage structures as described in Section 2.2.1.

A portion of the proposed Project overlies an existing BLM ROW grant (N-42581) authorized to Kern River for the Kern River Compressor Station and natural gas transmission facilities. The portion of the proposed Project immediately north of, and adjacent to, the Kern River Compressor Station fence line where the generation facility would be located would be relinquished from Kern River's grant and included in NV Energy's ROW authorization for the proposed facility.

Short-term ROWs (STROW) have been requested for temporary work areas for construction activities. These areas are for the construction of the generation facility, underground power distribution line, access to and along the overhead distribution line, and pulling and tensioning sites for the overhead distribution line.

Project components (long-term and short-term) that are proposed and their dimensions are included in **Table 2-2**.

If excess mineral materials are generated as part of the construction of the project, the excess materials will be disposed of in accordance with 43 CFR 3600.

### 1.7.1 Project Facilities

#### Ormat Energy Converter (OEC) (Power Generation Site) –

Project facilities at the generation site would include waste heat oil heaters (WFOH), thermal fluid storage, pumping and piping system (closed loop systems), ullage system, working fluid vaporizer and preheater, working fluid turbine and generator, recuperator, air-cooled condenser, expansion tank, emergency diesel generator, diesel fuel storage tank, switchgear components, electrical distribution line, telecommunication systems and appurtenant components to support these facilities.

The proposed Project would also include a new 10' x 40' cargo container for spare parts storage and an electrical shelter. The electrical shelter would include a dry fire protection sprinkler system. Water bottle dispensary will be provided for drinking needs and portable toilets would be provided only during construction.

An overall schematic showing the general process of recovered energy generation using waste heat recovery is presented as **Figure 2.1**.

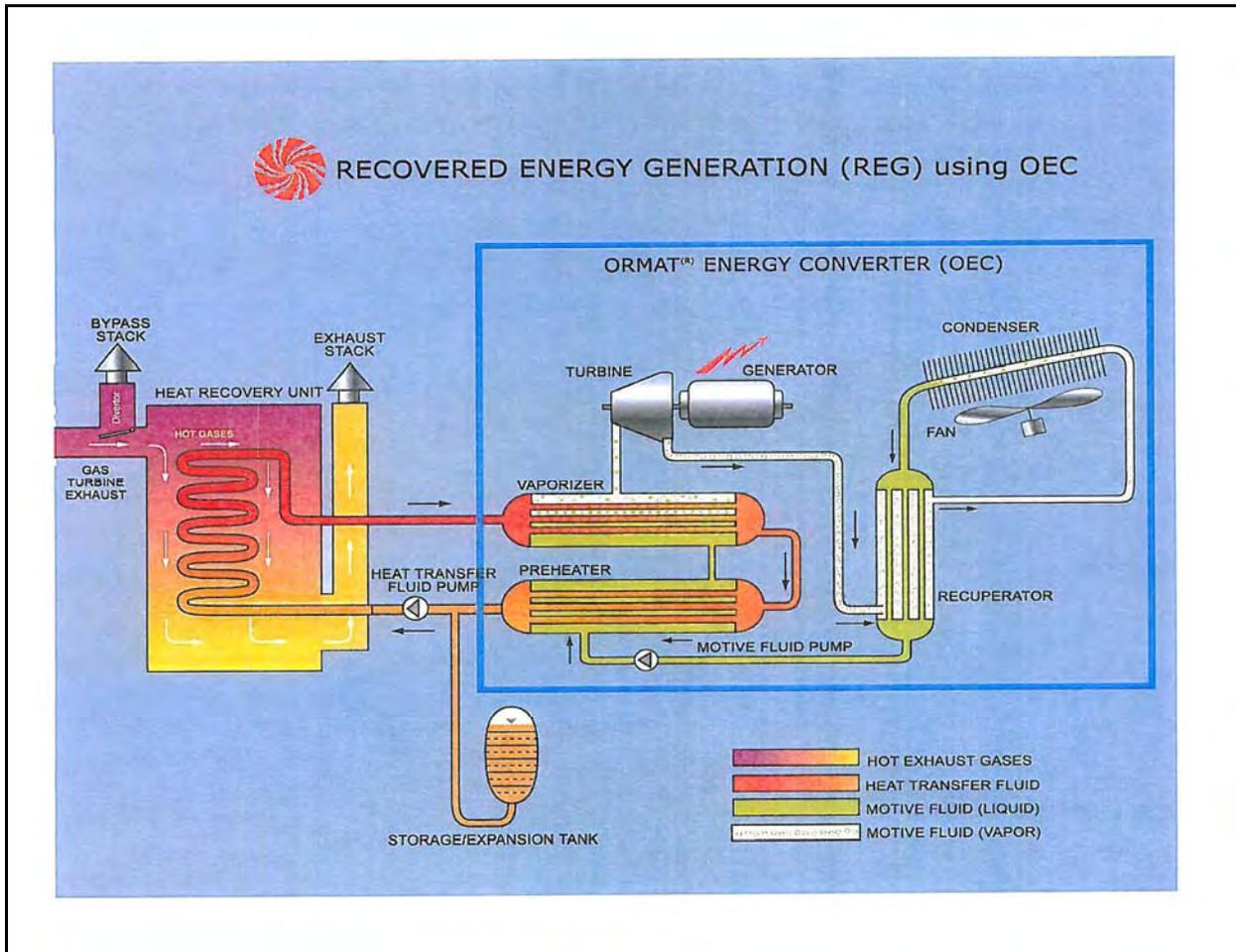


Figure 1-2 General Schematic of Recovered Energy Generation

At the existing Kern River Station (see **Figure 2.2**), three WHOH would be installed near each of the existing exhaust stacks from the three gas turbine compressors. The WHOHs would capture and transfer the waste heat from the turbine exhaust to a heat-stable thermal oil. This thermal oil would circulate from the WHOH via an overhead piping system to an Ormat Energy Converter (OEC). The photograph in **Figure 2.3** is of a similar OEC facility Ormat has constructed.

The OEC, a tube and shell heat exchanger, would receive the heated thermal oil where it would vaporize a motive fluid (i.e., pentane). From the OEC vaporizer, the thermal oil would loop through the pre-heater and be piped back to the WHOH within a closed loop system to continue the process. The vaporized pentane would turn the turbine and generate electricity.



**Figure 1-3 Site of Proposed Generation Facilities**



**Figure 1-4 Similar Ormat Energy Converter Facility**

The pentane vapor exhausted from the turbine would then be captured and condensed back to liquid in a bank of air-cooled condensers. From the condensers the pentane would flow into a heat exchanger/recuperator where it would be preheated before it is cycled back to the vaporizer in a separate closed loop system. Both the thermal oil and the pentane would be circulated in separate closed loop systems. In the event of an emergency or maintenance shut down, the heat would be diverted back to the existing stacks.

The WHOH thermal oil heater, circulating system and storage tank would contain approximately 140,000 pounds (~17,285 gallons) of thermal oil. The oil would circulate through the system at a temperature between 120 degrees Fahrenheit (°F) on the return side and 350 °F on the production side and would have no operational loss of thermal oil. Several steps will also be taken to prevent the system temperature from reaching the degradation temperature of the thermal oil.

The OEC vaporizer heat exchanger would circulate approximately 47,250 pounds (~9,000 gallons) of pentane through a separate closed loop system. Because the pentane to be used is a vapor in the motive section of the system, small quantities of fugitive pentane emissions from flanges, gaskets and pump seals would be emitted to the atmosphere during normal OEC operations. Also during normal OEC operations, as air enters the pentane loop in the OEC air condenser, small quantities of pentane, or Volatile Organic Compounds (VOCs) would be released as it gets vented through a stack back to the atmosphere. A pentane Vapor Recovery Unit (VRU) would be integrated into the OEC to remove most of the pentane from this air by condensing it to a liquid under pressure. Total normal fugitive and stack operational pentane emissions from similarly-sized OECs would be estimated to be no more than two to five pounds per day (750 to 1,850 pounds per year). These emission rates are based on Ormat's operational experience at similar facilities and on the design limitations of the proposed Project's OEC.

During major maintenance activities of the OEC, pentane would be transferred to a pentane storage tank. During transfer activities, a small quantity of pentane would be discharged to the atmosphere as fugitive air emissions when the OEC is opened.

This may amount to an additional estimated 1,000 to 2,000 pounds of VOCs per major maintenance event. Based on similar project experience, Ormat expects on average, one major maintenance event

per year. A conservative value covering VOC fugitive emissions from both operations and maintenance activities will be used in the air permit.

During the installation of the interconnection between the new facility and the existing 12 kV distribution line, a temporary portable diesel generator will be used to provide power to the Kern River Compressor Station. Use of this portable generator is not expected to be more than one month and all necessary applicable permits will be obtained prior to its use.

An emergency diesel engine electric generator (less than 200 hp) would be installed on site during operations. This generator would be used for emergency power during electrical outages. The generator may run for about one hour each week for testing and maintenance purposes and to ensure its availability in an emergency.

Criteria and hazardous air pollutant emissions would occur from the site due to diesel combustion during its use. These air emissions would be quantified by Ormat once additional information on the exact size and type of generator is determined.

New switchgear components (i.e., transformers, relay breakers, etc.) would be constructed and operated within the fenced OEC area to convert the generated electricity to 12 kV.

#### ***Underground/Overhead Power Distribution Lines-***

A new underground 12 kV distribution line, approximately 239 feet in length, would be installed to connect the new plant to the existing overhead distribution line west of the OEC area. To accept this new load onto the grid, this overhead line would be reconducted for a distance of approximately 1.25 miles. The reconducting of this line would occur as a maintenance activity under the existing grant, and terms and conditions, authorized by BLM, however, new temporary access is being requested under STROW to facilitate construction activities (i.e., overland access to line and pulling and tensioning sites).

#### ***Telecommunications Facilities-***

New telecommunication components (i.e., microwave dishes, enclosure, batteries, Ethernet, cable, etc.) would be installed at the OEC and at NV Energy's existing Jean Substation to upgrade the existing communication system. A new All-Dielectric Self-Supporting overhead fiber optic line containing 48 single mode fibers, approximately 3 ½ miles in length, would be installed on the existing overhead Goodsprings–Jean 69 kV transmission line from the Arden-Bighorn 230 kV line to the Jean Substation. This new fiber optic line would be in support of this transmission line and serve only NV Energy.

#### **1.7.2 Facility Construction**

Construction would generally follow the sequence of staking/flagging the limits and boundaries of the proposed Project, plant and wildlife clearances/relocations, site grading, fence installation, assembly and installation of all project facilities, demobilization, cleanup and site reclamation of all temporary work areas. A secure chain-link, tortoise-proof fence would be installed around the perimeter of the OEC site north of, and adjacent to, the Kern River Compressor Station fence line.

Construction of the proposed Project, from site preparation and grading to commercial operation, would be expected to take 10 months or less to complete. Depending on ROW authorizations and permit acquisitions, construction is anticipated to start in the last quarter of 2009 or earlier and proceed through the 3rd quarter of 2010, or earlier.

***Temporary Construction Facilities and Work Areas***

At the OEC (Power Generation Site), temporary construction facilities and work areas would include:

- Temporary trailers
- Portable toilets
- Parking for construction vehicles and equipment (within the fenced OEC site)
- Tool enclosures/containers
- Temporary work area surrounding the OEC site for fence installation and preparation of the permanent site improvements
- Temporary portable diesel generator to provide power to the Kern River Compressor Station during installation of the interconnection between the new facility and the existing 12 kV distribution line (up to one month).
- Site security staff, as necessary, during construction to maintain security of site materials and equipment and to control public access to the site.

Overhead/underground power distribution lines, temporary construction access and work areas would include -

- Temporary work areas for the pulling and tensioning of the 12 kV distribution interconnection and for reconductoring the overhead 12 kV distribution line
- Temporary overland access to and along the overhead 12 kV distribution line for reconductoring activities (some along existing roads, some drive and crush, and very minimal grading may be necessary in one location)
- Site security staff, as necessary, during construction to maintain security of site materials and equipment and to control public access to the site.

***Construction Workforce Numbers, Vehicles and Equipment***

The construction team would mobilize as soon as possible after permits for construction are authorized. A permanent tortoise-proof security fence would be installed around the OEC site boundary. Portable toilets and bottled water would be brought to the site for use throughout the construction and commissioning phase. Temporary construction power would be provided from a portable generator. Area lighting that faces downward would be provided and strategically located for safety and security.

Project construction would involve a peak workforce of approximately 20 to 30 personnel, including laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. An estimated average workforce of 15 would be on site at any given time. Project construction would also require additional support staff, including construction inspectors, surveyors, project managers, biological monitors and environmental inspectors. Construction would generally

occur between 7 a.m. and 7 p.m., Monday through Friday. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. For instance, during hot weather, it may be necessary to start work earlier to increase worker productivity and/or to avoid pouring concrete during high ambient temperatures. During startup and existing plant tie-in phases of the Project, some activities would occur 24 hours per day, 7 days per week.

Construction materials such as concrete, pipe, wire and cable, fuels, reinforcing steel, and small tools and consumables would be delivered to the site by truck. Initial grading work would include the use of excavators, graders, dump trucks, and end loaders, in addition to the support pickups, water trucks, and cranes.

As the proposed Project moves into the next stages of civil work after the first couple of weeks, equipment for foundations would be brought in, including, trenching machines, concrete mixers and trucks, additional excavators for foundation drilling, tractors, and additional support vehicles.

Based on similar projects, this type of work would take approximately two months before mechanical and electrical construction, with final touch ups once the major construction is completed.

#### ***Site Surveying and Staking***

A licensed professional surveyor would conduct a land survey of the project site and would stake the permanent and temporary construction areas before construction begins. Pre-construction survey work would consist of staking/flagging right-of-way boundaries, work areas (permanent and short-term use), cut and fill staking, access, foundation structure staking, and offsets. Staking/flagging would be maintained until final cleanup and/or reclamation is complete, after which all survey staking would be removed. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction activity limits.

#### ***Site Vegetation Removal***

There would be permanent and temporary disturbance during construction. Cactus and yucca present within work areas would be avoided if possible, or relocated during construction and transplanted back into restored temporary work areas after construction, per BLM stipulations.

#### ***Site Clearing, Grading and Excavation***

Grading activities would be completed with traditional earthmoving equipment including but not limited to bull dozers, scrapers, motor graders, excavators, water trucks, water wagons, loaders, and compactors. The majority of the efforts to grade the site would be completed within two months of commencement of construction activities.

Minor grading would be ongoing in the form of excavation and backfill for foundations, underground piping, duct bank and other associated facilities for the duration of construction. The site would ideally maintain a positive terrain slope of about two percent.

Existing slope varies and would be determined by the detailed grading design. Detailed grading of the site would be designed to minimize net import or export of fill and to minimize the total disturbed area.

### ***Construction Water Usage & Amounts***

Water for construction would be purchased and trucked to the site from a permitted source in the town of Jean. A 10,000 gallon J-stand would be maintained on site for fire suppression, road and site watering for dust control, and construction needs. It is anticipated that approximately 100,000 gallons of water would be used during construction.

### ***Erosion Control and Storm Water Drainage***

Site preparation for construction of the OEC would include cut and fill grading and placement, and compaction of structural fill to serve as a sub base. Drainage improvements would be constructed to maintain existing drainage flow patterns and allow for the safe operation and maintenance of the facilities.

Prior to construction, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared to meet the requirements of the Nevada Department of Conservation and NDEP Storm Water General Permit (NVR100000). The construction SWPPP would be prepared in accordance with good engineering practices and would include a description of Best Management Practices (BMPs), good housekeeping and structural controls that would be used to control pollutants from entering into storm water discharges. Structural controls implemented would meet the requirements of this permit and the design requirements of the Clark County Regional Flood Control District (CCRFCD) Hydrologic Criteria and Drainage Design Manual (CCRFCD Manual). After completion of the SWPPP, a Notice of Intent for coverage under this permit would be submitted to NDEP. The SWPPP BMPs and structural controls would be designed using the technical criteria in the CCRFCD Manual.

Site grading would be designed to maintain natural drainage patterns to the extent practicable. Channel modifications, if necessary, would be designed to convey 100-year flood flows in accordance with the technical criteria in Section 304 of the CCRFCD Manual. Culverts would be installed where necessary. All construction and maintenance activities would be conducted in a manner that minimizes disturbance to vegetation, drainage channels and washes.

### ***Project Access***

Access to the site from State Highway 161 is via an existing dirt road to the Kern River Compressor Station. Two gates would limit access into the OEC area. Temporary overland access to and along the existing overhead distribution line has been requested under a STROW. Overland access to and along the overhead distribution line would be from existing roads. Minor crushing of vegetation and compaction of soils would occur; however, no surface grading or clearing for access is proposed. All construction activities would be restricted to authorized access and construction areas.

### ***OEC and WHOH Assembly and Construction***

Equipment placement and structural steel assembly would be followed by pipefitting and welding. The process of mechanical construction would be followed by the electrical component construction. The WHOH installation would be followed by pipe supports, placement, pipe-fitting and welding. This process would be conducted in parallel to the OEC assembly. All OEC and WHOH assembly and construction would take place within the fenced site areas.

### ***Gravel, Aggregate and Concrete***

Concrete, mechanical, and electrical works would be performed with the aid of graders, rollers, front loaders, dump trucks, trenching machines, concrete mixer and pump trucks, cranes, and pick-ups. Concrete and aggregate would be purchased from the nearest local source and trucked to the Project site.

### ***Electrical Construction Activities***

During the installation of the interconnection between the new facility and the existing 12 kV distribution line, a temporary portable diesel generator will be used to provide power to the Kern River Compressor Station. Use of this portable generator is not expected to be more than 1 month and all necessary applicable permits would be obtained prior to its use.

### ***Construction Waste Management***

Construction wastes would be managed in accordance with the Resource Conservation and Recovery Act (RCRA) (42 USC 6901, et seq. and the RCRA implementing regulations at 40 CFR 260, et seq.) and other applicable state and local regulations.

### ***Non-hazardous solid waste***

During construction, approximately two tons of paper, wood, glass, and plastics are estimated to be generated from packing materials, waste lumber, insulation and empty non-hazardous chemical containers. These wastes would be recycled to the extent practical. Waste that cannot be recycled would be disposed of weekly in a Class III landfill. On site, the waste would be placed in dumpsters.

Approximately five tons of metal including steel (from welding and cutting operations, packing materials, and empty non-hazardous chemical containers) and aluminum waste (from packing materials and electrical wiring) are estimated to be generated during construction. Waste would be recycled where practical. All wastes that cannot be recycled (empty hazardous materials containers, spent welding materials, waste oil) would be deposited in a Class III landfill.

The Apex Regional Landfill is the closest landfill to the project area. This landfill, operated by Republic Services, is the largest in Nevada and serves commercial, industrial, municipal and residential customers throughout the Las Vegas area. Materials that can be accepted at this landfill include concrete, insulation, floor and roof tiles, fluorescent bulbs, glass, motor oil and paint. Waste construction materials that cannot be recycled would be disposed of at this landfill or other suitable disposal facilities in the Las Vegas area.

Material handling, containerization and segregation procedures to ensure the proper management of used oils, waste oils, waste paints and other wastes would be developed and documented in the Waste Management Plan. Totally enclosed containment would be provided for all trash. Trash and food items would be removed daily by construction workers and placed in predator-proof containers with re-sealing lids.

### ***Non-hazardous Wastewater***

There would potentially only be construction wastewater generated during the fire protection system testing and related pipe or hydrant flushing. This would be covered as an authorized non-industrial wastewater discharge under the construction SWPPP.

### **Hazardous Waste**

Limited quantities of hazardous wastes would be generated from construction activities. Waste hydraulic fluids and lubricating oils from leaks and maintenance activities and the associated oil-soaked materials (i.e., rags, sorbents, and filters) are expected to be the largest source of hazardous waste. Used hydraulic fluids and lubricating oils would be recycled when possible. The oil-containing solids would be managed as hazardous waste and sent to an approved offsite disposal facility in accordance with applicable policies.

Industry BMPs would be used to prevent spills; however, if spills do occur they would be cleaned up completely, quickly and safely and reported to authorities as necessary/required in accordance with the construction SWPPP and associated BMPs.

In addition, an SPCC Plan will be prepared and implemented. Hazardous materials would be stored in proper containers within the fenced OEC area. Cleanup materials (spill kits) would also be stored in this area. Expected materials include fuel and oils used in vehicles, welding gases, solvents used for cleaning, and paints.

Fuel, oil, and hydraulic fluids used in on-site vehicles would be transferred directly from a service truck to construction equipment and would not otherwise be stored on-site. Designated, trained service personnel would perform fueling either prior to the start of the workday or at completion of the workday. Service personnel and construction contractors would follow standard operating procedures for filling and servicing construction equipment and vehicles to reduce the potential for incidents involving hazardous materials and include:

- Refueling and maintenance of vehicles and equipment would occur only in designated areas that are either bermed or covered with concrete or asphalt to control potential spills and would be at least 50 meters from any drainage.
- Only authorized personnel would conduct vehicle and equipment service and maintenance.
- Refueling would only be conducted with approved pumps, hoses, and nozzles.
- Catch-pans would be placed under equipment to catch potential spills during servicing.
- All disconnected hoses would be placed in containers to collect residual liquids from the hose.
- Vehicle engines would be shut down during refueling.
- No smoking, open flames, or welding would be allowed in refueling or service areas; appropriate signage would be posted.
- When refueling is completed, the service truck would leave the work site.
- Service trucks would be provided with fire extinguishers and spill containment equipment, such as adsorbents.

- In the event a spill contaminates soil, the soil would be containerized and disposed of and reported according to applicable procedures.

### ***Construction Fire Prevention and Protection***

During construction, a 10,000 gallon J-stand would be on site and facility fire suppression system would be placed in service as early as practicable. Prior to installation of the facility's permanent fire suppression system, the guidelines outlined in the National Fire Protection Association 241 and 850 standards under the Fire Protection for the Construction Site and Clark County Fire Code would be followed. Fire extinguishers and other portable firefighting equipment would be available onsite. These fire extinguishers would be maintained for the full construction duration, in accordance with local and federal OSHA requirements.

Locations of portable fire extinguishers would include, but not necessarily be limited to hot work areas, flammable chemical storage areas, and mobile equipment (e.g., passenger vehicles and earthmoving equipment). Fire-fighting equipment would be located to allow for unobstructed access to the equipment and would be conspicuously marked. Portable firefighting equipment would be routinely inspected per regulatory requirements and replaced immediately, if defective, or if in need of recharge.

### ***Site Stabilization, Protection and Reclamation***

All temporary work areas would be restored to their original contour and preconstruction condition according to BLM stipulations. Survey stake markers and boundary stakes would be removed. Reclamation would also include erosion control as necessary. It is expected that site stabilization of the permanently disturbed OEC site may include a BLM-approved soil binder, geo-grid or the use of aggregate surfacing to allow the movement of maintenance vehicles within the site. Other site stabilization, protection and restoration procedures in the 1994 NDEP BMP Handbook would be considered as appropriate.

### ***1.7.3 Operation and Maintenance***

Operations would be fully automated needing no onsite operations personnel. Remote monitoring and override operation is accomplished in real time via the internet. Redundant communication satellite systems are also provided to assure communication at all times.

Maintenance needs include periodic equipment systems inspections, preventive maintenance and repair activities as described previously. Efficiencies would also be realized working with the existing operating generation stations. The installations would be inspected regularly by both ground patrol and online monitoring.

### ***1.7.4 Management Practices for Safety and Environmental Protection***

Some environmental protection measures, or industry BMPs have been incorporated into the project design or general application and are referred to as "generic mitigation measures" (**Table 2-1**) while "selectively recommended mitigation measures" would be applied on a case-by-case basis to the extent feasible and consistent with the Proposed Action's purpose and need, and required in-service date.

Chapter 4 provides a detailed assessment of the environmental impacts from construction and operation of the proposed Project, and a description of how and when the application of mitigation measures would be used to avoid or minimize such impacts.

<b>Table 1-2 Proposed Management Practices for Safety and Environmental Protection</b>
<p>All construction activities would be restricted to authorized access and construction areas. Should unforeseeable circumstances occur during construction which requires more areas than initially requested, permission must be granted by the BLM prior to disturbance and appropriate remediation fees would be re-assessed.</p>
<p>The area limits of construction activities normally will be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey or construction activity.</p>
<p>In temporary construction areas where recontouring is not anticipated (i.e., drive and crush overland travel), vegetation will be left in place wherever possible and the original contour will be maintained to avoid excessive root damage and allow for resprouting.</p>
<p>In temporary construction areas where ground disturbance is substantial or where recontouring is required, restoration may consist of removing and stockpiling topsoil and large rocks from disturbed areas to return temporarily disturbed areas back to original contours. Other methods may include reseeded (if required) and erosion control measures (i.e., cross drains, water bars) if necessary.</p>
<p>Existing improvements (i.e., access road, fences, and gates) will be repaired or replaced if they are damaged or destroyed by construction activities to their condition prior to disturbance as agreed to by the parties involved.</p>
<p>Project design of the new generation components includes changing the color of the equipment to match the existing Kern River Compressor Station to blend with the local modified landscape.</p>
<p>Prior to construction, all site construction personnel will be instructed on the protection of cultural, paleontological, and ecological resources. To assist in this effort, the construction contract will address: (a) federal, state, and tribal laws regarding antiquities, fossils, plants and wildlife, including collection and removal; (b) the importance of these resources and the purpose and necessity of protecting them.</p>
<p>All construction and maintenance activities will be conducted in a manner that will minimize disturbance to vegetation and drainage channels.</p>
<p>All existing roads identified for use on the proposed Project will be left in a condition equal to or better than their condition prior to project construction.</p>
<p>All requirements of those entities having jurisdiction over air quality matters will be adhered to and any permits needed for construction activities will be obtained. Open burning of construction trash will not be allowed unless permitted by appropriate authorities. The facility will demonstrate compliance with applicable air permit requirements. The facility will operate as a closed loop system operating lower than atmospheric pressure which will result in reducing fugitive emissions.</p>

<b>Table 1-2 Proposed Management Practices for Safety and Environmental Protection</b>
Hazardous materials will not be drained onto the ground or into streams or drainage areas. Totally enclosed containment will be provided for all trash. All construction waste including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials will be removed to a disposal facility authorized to accept such materials.
The contractors will wash all out-of-state construction vehicles off-site prior to start of construction.
Dust will be controlled by applying water as required during construction.
A qualified third-party contractor will serve NV Energy as an Environmental Inspector to ensure compliance with all project authorizations, permits and approvals.

### ***Human Health and Safety***

A Health and Safety Program would be established for construction and operation activities. The Health and Safety Program would include the following components:

- Policies and responsibilities
- Emergency response and contingency planning
- Hazard identification and job safety analysis
- Hazard communication
- Safe work practices
- Personal protective equipment
- Hazardous work permitting systems
- Special consideration for electrical safety, hazardous materials and wastes, fall protection, confined spaces and mobile equipment safety
- Training requirements
- Incident reporting and investigation
- Record keeping requirements.
- Material Safety Data Sheets (MSDS) will be made available to employees for all hazardous substances and petroleum products used on the site.

NV Energy would develop and implement a Construction Safety Training Program that would be adapted to serve as an Operations Safety Training Program as the project transitions from construction into routine power generation facility operations. The elements of the Safety Training Program would be essentially the same for operations as for construction, but specifics of the training would be adapted as needed to be suitable for the specific work activities associated with operations to the extent that the various activities differ between the two phases.

**Table 2-2 Project Components and Dimensions**

<b>BLM Serial No.</b>	<b>Description of Facility</b>	<b>Long-Term or Short-Term</b>	<b>Total Length (ft.)</b>	<b>Width (ft.)</b>	<b>Total Acreage (ac.)</b>
N-87355	Power Generation Site	Long-Term	Varies	varies	4.13
	Access Roadway to Site (existing)	Long-Term	5336.1	20	2.45
	Driveways (from access road to site) (2)	Long-Term	varies	varies	0.05
	Underground 12 kV Power Distribution Line (connect site to existing overhead power distribution line)	Long-Term	239	10	0.05
N-87355-01	Construction Area for Underground Distribution Line (10' width on each side of ROW for line and for full length)	Short-Term	478	10	0.11
	Pulling and Tensioning Area for Power Distribution Line	Short-Term	500	200	2.30
	Construction Area for Generation Site	Short-Term	1318.5	20	0.61
N-54236/C/	Access Roadways (2)	Long-Term	1905	20	0.87
N-54236-01	Pulling and Tensioning Areas for Reconductoring of Existing Distribution Line (2 – 500'x200)	Short-Term	1000	200	4.59
	Work Areas at Each Pole Site for Reconductoring (24 – 50'x50')	Short-Term	1200	50	1.38
	Access Roadways for Overland Travel (3)	Short-Term	690	20	0.32
	Construction Access – Drive and Crush (11)	Short-Term	2750	20	1.26
NEV-55838/G/	48-fiber communication Line to Be Located on Existing Poles	Long-Term	19008	10	4.36

## AFFECTED ENVIRONMENT

### 1.8 Introduction

This chapter describes the affected environment associated with the Proposed Action and No Action alternatives. The affected environment is the physical area that bounds the environmental, sociological, economic, or cultural features of interest that could be impacted by the Proposed Action or No Action alternatives. When preparing this EA, the best available information was used to describe existing environments and Proposed Action facility activities. This information serves as a baseline from which to identify and evaluate environmental changes resulting from the Proposed Action and No Action alternatives.

Based on consideration of the issues raised during the initial BLM interdisciplinary meeting for this Project, as well as guidance from NEPA and related statutes, the following critical elements of the environment were considered in the evaluation of the Proposed Action and No Action alternatives.

<b>Table 1-3 Supplemental Authorities Checklist</b>				
<b>Supplemental Authority<sup>1</sup></b>	<b>Not Present</b>	<b>Present/Not Affected</b>	<b>Present/May be Affected</b>	<b>Rationale</b>
Air Quality			✓	Impacts assessed in EA.
Area of Critical Environmental Concern (ACEC)	✓			No ACEC's are in or near the project area. Resource not assessed in the EA.
Cultural and Historical Resources		✓		Cultural resources impacts assessed in EA. No historic properties present.
Environmental Justice	✓			No minority or low-income groups would be disproportionately affected by health or environmental effects. Resource not assessed in the EA.
Prime or Unique Farmlands	✓			No Prime or Unique Farmlands are in or near the project area. Resource not assessed in the EA.
Noxious Weeds / Invasive Non-native Species		✓		Impacts assessed in the EA.
Riparian/Wetlands	✓			Resource not present. Not assessed in EA.
Native American Religious Concerns	✓			Resource not present. Not assessed in EA.

<sup>1</sup> See H-1790-1 (January 2008) Appendix I Supplemental Authorities to be Considered and IM NV-2009-030, Change 1

**Table 1-3 Supplemental Authorities Checklist**

<b>Supplemental Authority<sup>1</sup></b>	<b>Not Present</b>	<b>Present/Not Affected</b>	<b>Present/May be Affected</b>	<b>Rationale</b>
Floodplains	✓			Resource not present. Not assessed in EA.
Threatened, and Endangered Species			✓	Impacts assessed in the EA.
Migratory Birds		✓		Impacts assessed in the EA.
Waste – Hazardous/Solid			✓	Impacts assessed in the EA.
Water Quality		✓		Water quality impacts will be minimized through use of best management practices and permitting requirements. Resource not assessed in EA.
Wild & Scenic Rivers	✓			Resource is not present. Not assessed in the EA.
Wilderness	✓			Resource is not present. Not assessed in the EA.
Forests and Rangelands (HFRA Only)	✓			Project does not meet HFRA criteria. Not assessed in the EA.
Visual Resource Management			✓	Impacts assessed in the EA
Human Health and Safety		✓		Health and safety measures described in Chapter 2.

Table 1-1a Other Resources Considered for Analysis				
Supplemental Authority	Not Present	Present/Not Affected	Present/May be Affected	Rationale
Socioeconomic Resources		✓		An estimated average construction workforce of 15 would be on site at any given time. Operation of this unstaffed facility will likely utilize crew members from existing nearby facilities and will result in few if any long-term new jobs. Resource not assessed in the EA.
Land Use and Recreation		✓		Impacts assessed in the EA.
Paleontological and Geological Resource		✓		Impacts assessed in EA.
Visual Resource Management			✓	Impacts assessed in the EA

## 1.9 Project Location

The project area is located in the Goodsprings Valley, approximately 1 ½ miles east of Goodsprings, Nevada. The proposed Project would be located entirely on BLM managed lands in Township 24 South, Range 59 East, near Goodsprings, Nevada. The U.S. Geological Survey topographic quadrangles that encompass the Project facilities are the Goodsprings and Jean 7.5-minute Quadrangles.

## 1.10 Key Resources

### 1.10.1 Air Quality

The Clark County DAQEM has been delegated the authority, under the provisions of NRS 445B.500 and by direction of the Clark County Board of County Commissioners, to implement and enforce the air pollution control program in Clark County, Nevada.

The Clark County DAQEM applies and enforces the air quality regulations, which establish requirements for sources who emit or release air contaminants into the atmosphere.

Ambient air quality is primarily affected by the type and amount of pollutants emitted into the atmosphere, the size, and topography of the air basin, and the meteorological conditions. Ambient air quality standards (AAQS) have been developed by the federal and state governments in order to establish levels of air quality which, when exceeded, may cause adverse effects to human health. The EPA promulgated federal AAQS, under the provisions of the Clean Air Act.

The State of Nevada has a separate set of air quality regulations and its own state ambient air quality standards that are quite similar to the federal National AAQS (NAAQS). Clark County has a separate set of air quality regulations administered by the DAQEM that apply to projects within the county. The DAQEM is primarily responsible for regulating all stationary and non-vehicular sources; including construction sources of fugitive dust. According to Section 94 (Permitting and Dust Control for Construction Activities) of the DAQEM regulations, a project-specific permit is required for construction activities involving surface disturbances, such as grading and trenching. This permit will include conditions requiring control of fugitive dust emissions, as defined in Section 41 of the regulations. Fugitive dust control measures are incorporated into the project.

Geographic areas are designated by the EPA as "attainment areas" or "nonattainment areas" for a criteria pollutant. These criteria pollutants include ozone, carbon monoxide, oxides of nitrogen, sulfur dioxide, particulate matter with mean aerodynamic diameter smaller than 10 microns (PM<sub>10</sub>), particulate matter with mean aerodynamic diameter smaller than 2.5 microns (PM<sub>2.5</sub>), and lead. Units of concentration are expressed in parts per million or micrograms per cubic meter (µg/m<sup>3</sup>).

The project area is located within Clark County, in the North Ivanpah Valley Airshed (#164A) which has been designated by the EPA and the DAQEM as "non-attainment" for ozone. The project area is adjacent to the existing Kern River Compressor Station which became operational on January 2, 1992 and was issued an air quality (Title V) Operating Permit on January 22, 1992 (DAQEM 2008). Kern River conducts regular compliance air quality monitoring as required by the Operating Permits.

Air quality monitoring data obtained from the DAQEM was evaluated to characterize the existing air quality in the region. The closest air monitoring station is located in Jean, Nevada (CAMS 1019). The monitoring station is located at 1965 State Highway 161 (Latitude: 35° 47' 08" North (+35.785556°) Longitude: 115° 21' 25" West (-115.356944°).

The Jean monitoring station has provided real-time monitoring since January 1, 2003. Parameters currently being monitored include:

- Pollution parameters: Ozone, PM<sub>2.5</sub> Mass, PM<sub>10</sub> Mass, PM<sub>10</sub> (Standard Conditions), PM<sub>2.5</sub> (Local Conditions)
- Meteorological parameters: Wind Speed, Resultant Wind Speed, Resultant Wind Direction, Maximum Wind Gust, Standard Deviation of Horizontal Wind Direction, Outdoor Temperature, Internal Station Temperature, Barometric Pressure

Parameters that have been monitored but are no longer active include pollution parameters: Nitric Oxide, Nitrogen Dioxide, and oxides of nitrogen.

### ***1.10.2 Paleontological and Geological Resources***

As defined here, paleontological resources (i.e., fossils) are the remains and/or traces of prehistoric plant and animal life exclusive of humans. Fossil remains such as bones, teeth, shells, leaves, and wood are found in the geologic deposits (rock formations) within which they were originally buried. For the

purposes of this report, paleontological resources can be thought of as including not only the actual fossil remains but also the collecting localities and the geologic formations containing those localities.

By knowing the geology of a particular area and the fossil productivity of particular formations that occur in that area, it is possible to predict where fossils will, or will not, be encountered. Paleontological potential for each geological unit is assigned based on past fossil productivity of the geological unit. This study uses the Potential Fossil Yield Classification (PFYC) system that was adopted by the BLM in 2007 for assessing paleontological potential on federal land. The PFYC system is a five-tiered system that classifies geologic units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification system is applied to the geologic formation, member, or other distinguishable geologic unit, preferably at the most detailed mapping level (largest scale).

The project area is located in Goodsprings Valley between Table Mountain on the west-side and Bird Spring Range on the east-side of the valley within the Basin and Range Province. The area is characterized by broad, gently sloping, alluvial plains (grabens) that are separated by predominantly north-south trending mountain ranges (horsts) that are typical of the Basin and Range Province.

Quaternary alluvium is present throughout Goodsprings Valley, whereas the surrounding mountain ranges consist mostly of Paleozoic sedimentary rocks that include the Goodsprings Dolomite of early Paleozoic age, the Sultan Limestone of Devonian age, the Monte Cristo Limestone of Mississippian age, the Bird Spring Formation of late Paleozoic age, and the Kaibab, Toroweap, and Coconino formations of early to middle Permian age (Longwell et al., 1965).

The project area is mapped as Quaternary alluvium, which has a PFYC of 2 (low paleontological potential). Quaternary alluvium in the project area primarily consists of unconsolidated silt, sand, and gravel derived from the surrounding mountains and transported to the alluvial fan on the western side of Goodsprings Valley (Longwell et al., 1965). These deposits are assumed to be entirely Holocene in age (approximately 0 to 10,000 years old). A low potential indicates that the geologic unit is sedimentary in nature, but is not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils due to its recent age.

Approximately 200 feet to the south of the project area are outcrops of Kaibab, Toroweap, and Coconino formations of early to middle Permian age. These formations consist of cherty limestone, dolomite, shale, and sandstone that have a PFYC of 2 (low paleontological potential). Their low potential indicates that these geologic units are sedimentary in nature, but are not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils.

### **1.10.3 Soil Resources**

Information about soil distribution and type was obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey. Source information was derived from the Clark County Area, Soil Survey (NRCS 2007).

The majority of soils in the project area consist of the Weiser-Threelakes Association. Weiser soils (50%) are well drained, and consist of extremely gravelly fine sandy loam to extremely gravelly sandy loam alluvium derived from limestone and dolomite. These soils are found on fan remnants, on 2 to 8 percent slope. Threelakes soils (35%) are well drained, and consist of extremely gravelly fine sandy loam to an extremely gravelly loamy coarse sand soil type, found on 2 to 8 percent slope. These mixed alluvium soils are found on fan aprons and are derived from limestone materials. The remaining soil types found in this association include Threelakes (8%), Irongold (3%), Ifteen (3%), and Arizo (1%). These soils are found on inset fans (Threelakes), fan remnants (Irongold and Ifteen), and drainageways (Arizo).

The Potosi-Zeheme-Rock Outcrop Association is found in the foothill area west of the project site. Potosi soils (56%) are well drained, and consist of extremely gravelly loam on bedrock. Zeheme soils (25%) are well drained, and consist of extremely gravelly fine sandy loam to very gravelly fine sandy loam on bedrock. Both the Potosi and Zeheme soils are found on slopes ranging from 15 to 50 percent, with materials derived from weathered limestone. The Rock Outcrop association is found in higher elevations, and is not present in the immediate project area. The remaining soil types found in this association include Railroad (5%), steep Zeheme (3%), and Threelakes (1%). These soils are found on lava flows (Railroad), mountains (steep Zeheme), and drainageways (Threelakes).

#### **1.10.4 Land Use and Recreation**

The land use inventory identified existing and planned land uses, within immediate vicinity of the proposed project facilities, based on review and interpretation of existing maps, aerial photos, and land management plans. There are no existing recreational roads or permitted recreational uses within the proposed project area.

There are no known special land use designations within the proposed Project area. However, the project area is located within the Large-Scale Translocation Site (LSTS). A more detailed discussion of the LSTS program is provided in Section 3.3.6. The proposed generation facilities, including the underground distribution interconnection, are within an existing right-of-way boundary authorized to Kern River for its natural gas compressor station and pipeline facility. The reconductoring of the existing distribution line will be within NV Energy's existing ROW for this line.

Existing structures adjacent to or near the proposed facilities include:

- Kern River Natural Gas Compressor Station
- Underground natural gas lines and overhead electrical distribution lines
- State Route 161

The proposed Project is within the Jean Lake/Roach Lake Special Recreation Management Area. Management guidance includes intensive recreation opportunities, including competitive off-road vehicle and other recreational events, as well as dispersed recreational use and commercial activities.

Clark County, Nevada is currently conducting a trail study for the Goodsprings area. The Yellow Pine Rail Trail is proposed to extend from Goodsprings to Jean, Nevada. Two alternatives are being evaluated as of July 2009. Alternative one generally parallels State Route 161 to the south. Alternative two generally

extends north of State Route 161 and an existing transmission line corridor. The reconductoring of the existing overhead 12 kV distribution line would cross perpendicular to the proposed trail alternative one. Proposed trail alternative two would not be crossed because of its general alignment north of State Route 161.

**Tables 3-2 and 3-3** summarize the potential permanent and temporary disturbance acreage for the proposed project. Total permanent disturbance is anticipated to be approximately 3.25 acres and a total temporary disturbance is anticipated to be approximately 10.23 acres.

<b>Table 1-4 Long-Term Land Disturbance in Acres</b>			
<b>BLM Serial No.</b>	<b>Project Facility</b>	<b>Amount Presently Disturbed (ac.)</b>	<b>Total Potential New Disturbance (Approx.) (ac.)</b>
N-87355	Power Generation Site (4.13 ac.)	0.98	3.15
	Access Roadway to Site (existing) (1.89 ac.)	1.89	0
	Driveways (from access road to site) (2) (0.05 ac.)	0	0.05
	Underground 12 kV Power Distribution Line (connect site to existing overhead power distribution line) (0.05 ac.)	0	0.05
N-54236/C/	Access Roadways (2) (0.87 ac.)	0.87	0
NEV-55838/G/	48-fiber communication Line to Be Located on Existing Poles (4.36 ac.)	4.36	0
<b>TOTAL POTENTIAL LONG-TERM NEW DISTURBANCE (AC.)</b>			<b>3.25</b>

<b>Table 1-5 Temporary Land Disturbance in Acres</b>			
<b>BLM Serial No.</b>	<b>Project Facility</b>	<b>Amount Presently Disturbed (ac.)</b>	<b>Total Potential New Disturbance (Approx.) (ac.)</b>
N-87355-01	Construction Area for Underground Distribution Line (10' width on each side of ROW for line and for full length) (0.11 ac.)	0.02	0.09
	Pulling and Tensioning Area for Power Distribution Line (2.30 ac.)	0	2.30
	Construction Area for Generation Site (0.61 ac.)	0	0.61
N-54236-01	Pulling and Tensioning Areas for Reconductoring of Existing Distribution Line (2 – 500'x200) (4.59 ac.)	0	4.59
	Work Areas at Each Pole Site for Reconductoring (24 – 50'x50') (1.38 ac.)	0	1.38
	Access Roadways for Overland Travel (3) (0.32 ac.)	0.11	0.21
	Construction Access – Drive and Crush (11) (1.26 ac.)	0	1.26
<b>TOTAL POTENTIAL TEMPORARY LAND DISTURBANCE (AC.)</b>			<b>10.44</b>

### **1.10.5 Botanical Resources**

The project area is located within the Desert Shrublands Zone described by Nachlinger and Reese (1996). The Desert Shrublands Zone is the hottest and driest of all the zones in the lowest elevations of the Spring Mountains. It is defined most importantly by low elevation, gentle slopes, and by its dominant vegetation, blackbrush (*Coleogyne ramosissima*), creosote bush (*Larrea tridentata*), Utah juniper (*Juniperus osteosperma*), and Stansbury cliffrose (*Purshia stansburiana*). Nachlinger and Reese (1996) further describe this zone by five different series. Only the Creosote Bush series is found within the project area.

The Creosote Bush Series community is principally dominated by creosote bush, with white bursage as a co-dominant species. It occurs on alluvial slopes, valley floors and mountain slopes below 4,000 feet (1,219 meters) in elevation (Nachlinger and Reese 1996). This community is usually found on well-drained soils, often on bajadas and low hills. Primary associated species include: white bursage (*Ambrosia dumosa*), red brome (*Bromus rubens*), blackbrush (*Coleogyne ramosissima*), Nevada joint fir (*Ephedra nevadensis*), desert trumpet (*Eriogonum inflatum*), littleleaf ratany (*Krameria erecta*), winterfat (*Krascheninnikovia lanata*), spiny menedora (*Menodora spinescens*), and Joshua tree (*Yucca brevifolia*).

#### **Non-Native Invasive Species and Noxious Weeds**

Executive Order 13112, Invasive Species, directs federal agencies to prevent the introduction and spread of invasive plant species (noxious weeds), and to minimize impacts associated with invasive species. The State of Nevada and U.S. Department of Agriculture maintain an official list of weed species that are designated noxious for the state. The Nevada Control of Insects, Pests, and Noxious Weeds Act (NRS: Chapter 555) grants the Director of the Nevada Department of Agriculture the authority to investigate and control noxious plants.

According to Nevada Revised Statutes 555.005, noxious weeds are defined as “any species of plant that is or is likely to be, detrimental or destructive and difficult to control or eradicate.” Noxious weeds are a concern in most parts of the United States and in southern Nevada, as they are opportunistic, and can exclude native plants from an area if left unchecked. Therefore, the BLM established a goal that all NEPA documents analyze potential for noxious weed spread and explore measures to minimize the potential for noxious weed invasion for each management practice involving surface disturbance.

In May 2009, EPG conducted a noxious weed risk assessment for the proposed Project area and developed a Noxious Weed Management Plan (located in case file at BLM office). The Noxious Weed Management Plan describes methods to control the potential occurrence/infestation of noxious weeds during and following construction of the proposed Project. During the rare plant survey, a small patch of the invasive species Indian hedgemustard (*Sisymbrium orientale*) was observed in a nearby wash outside the project area.

#### **Threatened Endangered and Special Status Plant Species**

Special status plant species include federally threatened, endangered, proposed, and candidate species, Nevada BLM Sensitive species, State of Nevada classified species, and protected species of cactus and yucca. Threatened, endangered or special status species are species that receive some sort of

protection from the USFWS, the BLM or the State of Nevada. Threatened and endangered species are placed on a federal list by the USFWS and receive protection under the Endangered Species Act of 1973, as amended. Candidate species are those, which have sufficient information to be listed, but higher priority species proposed for listing prevent the USFWS from protecting them. Other species are considered special status or sensitive species by the BLM or are included on the sensitive species list for Nevada, which is maintained by Nevada Natural Heritage Program (NNHP).

Several threatened, endangered or special status species occur in Clark County and may potentially occur in the project area. The NNHP was contacted on May 22, 2009 and provided a list of several special status species that are known to occur in or near the project area. These species, and others that may potentially occur within the project area, and their current status with the State of Nevada, USFWS, and BLM are provided in **Table 3-4**.

<b>Table 1-6 Threatened, Endangered, or Special Status Plant Species That May Occur</b>				
<b>Common Name</b>	<b>Scientific Name</b>	<b>ESA</b>	<b>BLM</b>	<b>State</b>
Spring Mountains milkvetch	<i>Astragalus remotus</i>		State Sensitive	
Sheep fleabane	<i>Erigeron ovinus</i>		State Sensitive	
Yellow two-tone beardtongue	<i>Penstemon bicolor bicolor</i>		State Sensitive	
Rosy two-tone beardtongue	<i>Penstemon bicolor roseus</i>		State Sensitive	

On May 11, 2009, a BLM approved botanist conducted a rare plant survey of the project area. Prior to conducting the survey, the BLM provided a botanical list which included *Penstemon bicolor* ssp. *bicolor* (yellow two-toned beardtongue), *Acacia greggii* (catclaw acacia), *Prosopis glandulosa* (honey mesquite), and several cactus and yucca species. The survey area falls within habitat for the BLM sensitive species *Penstemon bicolor* ssp. *bicolor* (yellow two-toned beardtongue) and known populations exist in the area.

The BLM is required to perform abundance surveys for cactus and yucca species as they are protected by state law, NRS 527.060 – 527.120. This abundance survey was conducted simultaneously with the rare plant surveys.

The survey area had minimal disturbance at the time the surveys were conducted. If a target species was located a GPS point was taken using datum WGS 1984. For cactus and yucca species, plants were estimated within three separate portions of the survey area. Transects were spaced 10 meters apart to provide enough coverage and to ensure that no target species were missed.

A total of 62 different plant species were recorded throughout the project area (Noxious Weed Management Plan). Several cactus species were observed throughout the project area including, silver cholla (*Opuntia echinocarpa*), beavertail cactus (*O. basillaris*), old man pricklypear (*O. erinacea*), pencil cholla (*O. ramosissima*), hedgehog cactus (*Echinocereus engelmannii*), Mojave mound cactus (*E. triglochidiatus*), and cottontop (*Echinocactus polycephalus*). It was estimated that cacti density in the project area was 10 cacti per acre (Appendix A). Yucca density was estimated at 41 plants per acre

(Appendix A). Additional species were observed in wash habitat including, *Hymenoclea salsola*, *Salvia dorii*, *Penstemon palmeri*, *Ambrosia eriocentra*, and *Chrysothamnus paniculatus*. No catclaw acacia or honey mesquite individuals were observed in the survey area.

Palmer's penstemon plants were observed within the survey area, but no obvious yellow two-toned penstemon plants. All open penstemon flowers present at the time of the survey were pink. Some hybrids between the two species have both pink and yellow flowers and are difficult to discern depending on the age of the flower or degree of hybridization. Plants were recorded as Palmer's penstemon.

Annual vegetation was sparsely distributed as is typical for this elevation; woolly plantain (*Plantago ovata*) and desert pincushion (*Chaenactis stevioides*) were dominant as well as non-native annuals Arabian grass (*Schismus sp.*) and red brome (*Bromus madritensis v. rubens*).

#### **1.10.6 Wildlife Resources**

Wildlife species in the project area are those that have adapted to desert scrub habitats with little cover and dry conditions. Because surface water is rare and transitory, no fish or amphibian species occur in the project area. A limited number of common reptile, bird, and mammal species are likely to occur in the creosote-bursage habitat of the project area.

Reptiles that may occur in the project area include the desert tortoise (*Gopherus agassizii*) and several species of lizards, including chuckwalla (*Sauromalus obesus*), Gila monster (*Heloderma suspectum cinctum*), western whiptail (*Cnemidophorus tigris*), side-blotched lizard (*Uta stansburiana*), zebra-tailed lizard (*Callisaurus draconoides*), and desert horned lizard (*Phrynosoma platyrhinos*). The project area may also support many species of snakes such as western shovel-nosed snake (*Chionactis occipitalis*), desert night snake (*Hypsiglena torquata deserticola*), California kingsnake (*Lampropeltis getula californiae*), red coachwhip (*Masticophis flagellum piceus*), desert striped whipsnake (*Masticophis taeniatus taeniatus*), Great Basin gopher snake (*Pituophis melanoleucus deserticola*), Mojave desert sidewinder (*Crotalus cerastes cerastes*), southwestern speckled rattlesnake (*Crotalus mitchelli pyrrhus*), and Mojave rattlesnake (Mojave green) (*Crotalus scutulatus*).

Mammalian species that have the potential to occur include black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), kangaroo rats (*Dipodomys sp.*), desert kit fox (*Vulpes macrotis arsipus*), antelope ground squirrel (*Ammospermophilus leucurus*) and coyote (*Canis latrans*). The surrounding mountains may contain suitable habitat for bats, including pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), big brown bat (*Eptesicus fuscus*), Allen's big-eared bat (*Idionycteris phyllotis*), California myotis (*Myotis californicus*), western small-footed myotis (*M. ciliolabrum*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), and western pipistrelle (*Pipistrellus hesperus*). Evidence of kit fox, coyote and rodents was observed within the project area during the field survey.

#### **Migratory Birds**

Executive Order 13186 (January 10, 2001) defines the responsibilities of federal agencies to protect migratory birds and implement the Migratory Bird Treaty Act of 1918 (MBTA) and subsequent

amendments (16 U.S.C. 703-71 1). The MBTA states that it is unlawful to take, kill, or possess migratory birds. Numerous bird species travel through southern Nevada during spring and fall migrations. A list of those that are protected birds is provided in 50 CFR 10.13.

The list of birds protected under this regulation is extensive and the project area has potential to support a few of these species, both as migrants and during the breeding season. Common migratory bird species that might occur within the project area include: horned lark (*Eremophila alpestris*), sage sparrows (*Amphispiza belli*), black-throated sparrows (*Amphispiza bilineata*), sage thrashers (*Oreoscoptes montanus*), and chipping sparrows (*Spizella passerina*). Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from March 15 through July 30. No bird species or nests, active or inactive, were observed during field visits.

### ***Threatened Endangered and Special Status Wildlife Species***

#### *Desert Tortoise*

The desert tortoise, a USFWS threatened species for the Mojave Desert population, is a medium-sized, terrestrial turtle with a light to very dark brown high-domed shaped shell. The tortoise has dry and scaly skin, thick, sturdy hind legs, and long flattened forelimbs with well-developed muscles for digging. Adult desert tortoises weigh from 8 to 15 pounds and range in size from about 1.4 inches (carapace length) at hatching to 11 to 16 inches as adults (Boarman 2002). The desert tortoise is listed as threatened under provisions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

Desert tortoises in the Mojave Desert are primarily active between May and June, with a secondary activity period from September through October. During inactive periods, tortoises hibernate or rest in subterranean burrows or caliche caves, spending as much as 98 percent of their time underground (Marlow 1979; Nagy and Medica 1986). During active periods, they usually spend nights and the hotter portion of the day in their burrow. Tortoises construct and maintain a series of single-opening burrows concentrated in core areas or home ranges. In Nevada, desert tortoises typically occur on flats, valleys, bajadas, and rolling hills generally 2,000 to 3,500 feet in elevation.

The project area is located within the LSTS, an area where tortoises from the Desert Tortoise Conservation Center were released. In 1996, Clark County prepared an EA for the translocation and research of desert tortoise on BLM lands near Jean (RECON, 1996). The area included approximately 26,200 acres bordered on the east by I-15, the north by Highway 161, the west by the Spring Mountains, and the south by a proposed fence a few miles north of Nevada/California state line. The EA covered the translocation of up to 1,200 desert tortoise to the site along with research to evaluate the effectiveness of the translocation effort. A second EA was prepared in 2003 (Aztec Environmental Consulting, 2003) which allowed additional desert tortoise to be released in the LSTS over a 36-month period (March 2003 to March 2007).

A presence/absence survey for tortoises was completed on May 11, 2009. Data sheets from this survey can be found in Appendix B of this document. Multiple active and inactive burrows were found within the project area as well as scat, a carcass and three live tortoises during the survey.

### Banded Gila Monster

Gila monster, a state sensitive species and a USFWS species of concern, is one of two species of venomous lizards found in North America. The Gila monster is a heavy-bodied lizard with large bead-like scales. This lizard is a mottling of black, pink, orange, or yellow with a short, swollen tail. Active at night and on cloudy days, Gila monsters can be found in arid and semiarid regions of gravelly and sandy soils, often seen under rocks, in burrows of other animals and sometimes in holes it digs itself.

The Gila monster's range includes parts of southwestern Utah and southern Arizona, southern Nevada, parts of southeastern California, southwestern New Mexico, and Sonora to Sinaloa, Mexico. The project area contains potential habitat for the Gila monster, however there are no known occurrences of them (USFWS 2000). No individuals or banded Gila monster sign (such as scat) was observed during field surveys.

### Western Chuckwalla

The chuckwalla, a federal species of concern, is found throughout the deserts of the southwestern United States and northern Mexico. Chuckwalla's bodies are generally black with reddish hues while the tail is light colored. The species is primarily herbivorous, but may consume insects and their larvae. Chuckwallas inhabit rocky outcrops where cover is available between boulders or in rock crevices typically on slopes and open flats below 6,000 feet. Typical habitat includes rocky hillsides and talus slopes, boulder piles, lava bed, or other clusters of rock, usually in association Mojave desertscrub, which includes black brush, salt desert scrub, and mesquite/catclaw. This species requires shady, well-drained soils for nests. The chuckwalla is a widespread species, but is regionally limited by its requirement for rock outcrops (Stebbins 2003). Although the project area contains potential habitat for the chuckwalla, there were no observations of chuckwallas in the project area.

### Western Burrowing Owl

The western burrowing owl, a USFWS species of concern, is found year-round in Mojave desertscrub habitats throughout Clark County. This species is an arid land resident that is relatively tolerant of development. Burrowing owl habitat in southern Nevada typically consists of open, creosote bursage habitat on the desert floors. Burrowing owls most frequently use burrows created by other animals such as ground squirrels, coyotes, kit fox or desert tortoises. The burrows are used for all life phases - nesting, roosting, and cover. Disturbance of breeding or nesting owls that are protecting eggs or young is prohibited by the MBTA. Although the project area contains potential habitat for western burrowing owls, there were none observed in the project area.

### **1.10.7 Cultural Resources**

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties. For the purposes of Section 106, historic properties are defined as those that are listed in or eligible for nomination to the National Register of Historic Places (NRHP). Efforts to identify and evaluate cultural resource properties for this undertaking according to 36 CFR 800.4 included evaluation of the results of an existing data review.

A one-mile study area surrounding the proposed APE was researched to determine the number of cultural resources in the area and the number of cultural resource studies that have been previously conducted in the area. A total of 16 previously conducted surveys are located within the study area, these include surveys for the proposed Wyoming to California natural gas pipeline, multiple surveys for the Kern River pipeline and Compressor Station, and a tortoise relocation project. A total of 50 sites have previously been recorded, these include historic and prehistoric isolates, historic trash dumps and railroad related sites, a historic bridge, prehistoric lithic scatters, a prehistoric quarry, a prehistoric rockshelter, and prehistoric rock art; the majority of the sites are either isolates or historic scatters.

The footprint of the existing compressor station and several portions of the distribution line to the Kern River Compressor Station have been evaluated for cultural resources. Initial construction of the line, however, has disturbed the surface to the extent that the probability of finding intact cultural deposits is negligible; therefore, the BLM Archaeologist has determined that those portions previously unevaluated are exempt from Section 106 review as set forth in Section VII.A.2 of the State Protocol Agreement with the Nevada State Historic Preservation Office (SHPO). There are no historic properties within the APE for this project; no further evaluation is required. The project as proposed will have “no effect” to historic properties.

#### ***1.10.8 Visual Resources***

The proposed project is located within the Las Vegas RMP Visual Resource Management (VRM) area identified as “south of Las Vegas Valley”, comprised primarily of desert, mountains, playas and bajadas managed to avoid resource uses and surface disturbance from dominating the landscape (BLM 1998).

The localized project setting is characterized by typical Mojave Desert vegetation dominated by creosote with scattered occurrences of yucca and Joshua tree in flat terrain. The setting has been locally modified by an existing natural gas compressor station, owned by Kern River, and associated ancillary facilities including an access road, underground natural gas pipelines and associated overhead distribution lines all authorized by BLM prior to the implementation of the RMP in 1998. The overall existing character of the landscape is comprised of the aforementioned industrial elements surrounded by natural desert.

The setting described above is typical of class C scenic quality per BLM guidelines (BLM Manual 8410-1 Visual Resource Inventory). Sensitive viewing locations and their associated viewers typically include travel routes, residences, and recreation areas. Identified sensitive viewers with potential views of the proposed Project include residences from Goodsprings, travelers along State Highway 161, and viewers from the town of Jean (commercial sites catering to travelers and a hotel). The proposed Project is located within a VRM Class II area (BLM 1998). The BLM Management Direction for this area is “to retain the landscape’s existing character.” In this area, “authorized actions may not modify existing landscapes or attract the attention of the casual observer” (RMP VS-1-a 1998).

#### ***1.10.9 Waste – Hazardous and Solid***

Hazardous and solid waste potentially generated during construction and operation of the proposed Project is listed in **Table 3-5** below. **Table 3-6** lists hazardous materials that may be used and stored

during operation of the project. Information describing how these materials will be used during construction and operations is described in Section 2.2. The resultant analysis is used in Chapter 4 to assess the potential impacts of construction and operation of the proposed Project relating to hazards and hazardous materials.

<b>Table 1-7 Wastes Potentially Generated by the Project During Construction and Operations</b>		
<b>Waste</b>	<b>Composition</b>	<b>Classification</b>
Pentane	Hydrocarbon and VOCs	Highly flammable. Evaporates quickly in ambient conditions.
Lubricating oil and hydraulic fluids	Hydrocarbon	Hazardous
Thermal oil (DOWTHERM® Q)	Hydrocarbon	Potentially hazardous
Oil filters	Paper, metal, hydrocarbon	Hazardous
Oily rags	Hydrocarbon, cloth	Hazardous
Oil sorbents	Hydrocarbon	Hazardous
Scrap metal	Steel, copper	Non-hazardous

<b>Table 1-8 Hazardous Material that may be Used/Stored during Operation</b>	
<b>Material</b>	<b>Relative Toxicity and Hazard Class</b>
Pentane	Low toxicity, aspiration hazard Extremely flammable liquid Class IA combustible liquid Highly hazardous substance under NRS
Thermal oil (DOWTHERM® Q)	Low toxicity, Low flammability
Lube oil	Low toxicity, Low flammability
Diesel fuel	Moderate toxicity, Moderate flammability Class II combustible liquid
Nitrogen	Low toxicity, Low flammability
Welding gas (may be stored onsite) Acetylene	Low toxicity Extreme flammability when under pressure High reactivity
Welding gas (may be stored onsite) Oxygen	Low toxicity, Hazard class – Oxidizer
BLM approved herbicide	Low toxicity, Hazard class - Irritant

#### **1.10.10 Water Quality**

The proposed project area lies in an arid setting where annual rainfall averages just over 4 inches a year. Throughout most of the site, surface water runoff is ephemeral or due to brief storm events which are channeled through natural drainage which quickly infiltrates the coarse-grained alluvium found in this area. Natural drainage washes are located approximately 0.6 miles northeast of the proposed project facility site and are part of the surface water drainage pattern for the Goodsprings Valley.

## 2 ENVIRONMENTAL CONSEQUENCES

The potential environmental consequences, or impacts, described in this chapter are based on the environmental effects that would result from the construction and operation of the proposed Project. A detailed discussion of the specifications and construction of the proposed Project is found in Chapter 2. To identify project-related impacts, changes to the environment that would result from construction and operation of the proposed Project were determined by comparing these actions to the existing environment (described in Chapter 3).

### ***Mitigation Measures***

Once impacts to environmental, cultural, and human resources were identified for the Proposed Action, mitigation measures were evaluated to determine if they could be effective in reducing or eliminating impacts. Management practices that would minimize or eliminate impacts to the environment that are part of project design and implementation are listed in Table 2-1. These management practices were considered when assessing initial impacts. Mitigation consists of measures or techniques developed after impacts were identified and assessed.

Impacts remaining after applying any or all mitigation measures are termed residual impacts. Impacts and associated mitigation measures are discussed in detail within each resource section.

### **2.1 Air Quality**

Proposed Action: Construction and operation of the proposed Project will require compliance with all applicable federal, state, and local air quality laws and regulations. Air emissions impacts associated with operation of the proposed Project would be addressed through the minor source air quality permitting procedures.

During the installation of the interconnection between the new facility and the existing 12 kV distribution line, a temporary portable diesel generator will be used to provide power to the Kern River Compressor Station. Use of this portable generator is not expected to be more than one month and all necessary applicable permits will be obtained prior to its use.

Water will be the primary means of dust abatement during all phases of construction. The construction contractor will obtain a dust permit from the Clark County DAQEM prior to construction and comply with all conditions in the permit. Water spray will be controlled so that pooling will be avoided to the extent possible. Speed limits of 15 miles per hour will be set and strictly enforced. Construction water and water used for dust control will come from a permitted source and be of quality that will not impact local resources. The contractors working on the project will be responsible for bringing water to the project area, which may involve trucks, J-stand, or other acceptable water delivery methods. All project personnel will be educated on the site regarding the dust mitigation plan.

Construction traffic would have a temporary, minor increase on dust levels. Those impacts would be short-term and dust control measures as disclosed under a dust permit would reduce impacts. Additionally, construction traffic would have short-term increased emissions due to the vehicles and

equipment required to construct the facility. Small amounts of fugitive emissions may escape from the facility during regular operating procedures, but should be well under permit emission limits.

During normal operations, small quantities of pentane may be released into the atmosphere. A pentane VRU would be integrated into the OEC to remove the majority of the pentane from the air by condensing it to a liquid under pressure. Moreover, the closed loop system will operate at a pressure lower than atmospheric pressure which will result in reducing fugitive emissions. Total normal fugitive and stack operational pentane emissions from an OEC are estimated to be no more than 2 to 5 pounds per day (750 to 1,850 pounds per year). These emission rates are based on Ormat's operational experience at similar facilities and on the design limitations of the OEC unit.

During major maintenance activities of the OEC, pentane would be transferred to a pentane storage tank. During transfer activities, a small quantity of pentane would be discharged to the atmosphere as fugitive air emissions when the OEC is opened. This may amount to an additional estimated 1,000 to 2,000 pounds of VOCs per major maintenance event. Based on similar project experience, Ormat expects on average, one major maintenance event per year. A conservative value covering VOC fugitive emissions from both operations and maintenance activities will be used in the air permit.

No Action Alternative: The ROW would not be issued and there would be no disturbance to air quality at or within the vicinity of the proposed Project. Therefore, there would be no effect to air quality, and no impact would occur.

Mitigation: No additional mitigation required.

## **2.2 Paleontological and Geological Resources**

Proposed Action: Impacts to paleontological resources are anticipated to be minimal to non-existent during the construction portion of the project. Potentially present paleontological resources would not be impacted during the operation and maintenance phases of the project. Because of the recent age of the Quaternary alluvium, any contained organic remains are too young to be considered paleontological resources. As a result, Quaternary alluvium is given a PFYC of 2, which represents a low paleontological potential.

Potential impacts to geological resources would be limited to areas of direct surface disturbance related to project construction activities on soil, alluvium, and possibly rock outcrops. There have been no outcrops identified in the project area. Most of the construction will take place on Quaternary alluvium. These impacts can be effectively mitigated through implementing the Generic Mitigation Measures listed in Chapter 2.

No Action Alternative: The ROW would not be issued and there would be no disturbance to geological or paleontological resources at or within the vicinity of the proposed Project. Therefore, there would be no effect to these resources, and no impact would occur.

Mitigation: No additional mitigation is required due to the low paleontological potential of the Quaternary alluvium in the project area. Nevertheless, in the event that the construction crew or the

equipment operators suspect that they have uncovered fossils or other resources, preservation of the paleontological resource and notification of a qualified paleontologist are mandatory. Upon uncovering a potential resource, the BLM Authorized Officer should be notified and construction personnel should immediately divert excavation activities away from the potential site if safe to do so. Suspected resource localities should be avoided by a minimum of six meters until the Authorized Officer has approved further excavation. The operator or crew member should immediately stake off and flag the affected area, so that subsequent excavation equipment does not further damage or destroy the resource. Excavation in the affected area must not continue until notified to proceed by the Authorized Officer.

### **2.3 Soil Resources**

Proposed Action: Short-term direct impacts resulting from construction activities include increase soil compaction and erosion potential from wind or heavy rainfall events. These effects would be influenced by the extent of disturbance, surface soil texture, soil cover, slope steepness, and intensity of storm events.

Soil stabilization measures would be initiating during and following construction. During construction, the selected erosion and soil control BMPs would be based on the type of disturbance expected, soil type, and the location of the site in relation to sensitive resources.

No Action Alternative: The ROW would not be issued and there would be no impacts to soil resources at or within the vicinity of the proposed Project.

Mitigation: No additional mitigation required.

### **2.4 Land Use and Recreation**

Proposed Action: Direct impacts would likely only be within the approved right-of-way. Indirect impacts are not anticipated based on the proposed project description. Because a majority of the proposed project facilities are within an existing right-of-way, no impacts are anticipated to land use and recreation resources. The proposed facility that is located outside of an existing right-of-way includes minimal disturbance (approximately 0.17 acre) and is near existing industrial types of land uses.

The final alignment for the proposed Yellow Pine Rail Trail has not been identified. The proposed distribution line reconductor activity would cross proposed trail alignment one; however, if either alternatives are carried forward, impacts from the proposed project would be minimal.

No impacts are anticipated to the Jean/Roach Dry Lakes Special Recreation Management Area. The proposed facilities are located adjacent to or near existing industrial types of land uses and would not require displacement of recreational uses.

No Action Alternative: The ROW would not be issued and there would be no change in land use or impacts on recreational resources at or within the vicinity of the proposed Project. Therefore, there would be no effect to these resources, and no impact would occur.

Mitigation: No additional mitigation required.

## **2.5 Botanical Resources**

Proposed Action: Potential direct short-term impacts to botanical resources associated with construction activities could include 1) crushing and/or removal of native vegetation, 2) grading and compaction of soil, and 3) loss or displacement of individuals and habitat features of sensitive species of plants. The removal of desert vegetation could have a long-term impact. The arid environment of this region is not conducive to plant growth and regeneration of vegetation following construction could be slow. Natural regeneration of these areas could take several years.

During construction, approximately three acres would be graded and permanently disturbed. Approximately nine acres would be temporarily disturbed from overland “drive and crush” travel and work along the existing overhead distribution line and pull and tension areas. Environmental monitors would ensure construction vehicles utilize the same travel route to minimize the total amount temporarily disturbed. Permanent impacts to vegetation in the project area will consist mainly of loss of creosote bush - white bursage scrub. The loss of this vegetation community is a small percentage of that available in the area because of abundance of creosote bush - white bursage scrub found within the region. Mitigation has been incorporated to reduce construction impacts to the degree possible.

Any cacti and yucca encountered within the permanent and temporary ROW areas will be avoided if possible, or relocated during construction and transplanted back into restored temporary work areas after construction, per BLM stipulations.

No Action Alternative: The ROW would not be issued and there would be no disturbance on botanical resources at or within the vicinity of the proposed Project. Therefore, there would be no effect to these resources, and no impact would occur.

Mitigation: A biological monitor(s) will be on-site during construction to ensure all cacti, yucca, and sensitive plant species are avoided to the greatest extent practicable and that potential impacts to the habitat are minimized. Cacti and yucca species will be salvaged and relocated or transplanted back into restored temporary work areas after project completion. All construction activities would be restricted to authorized access and construction areas.

### ***Noxious Weeds/Invasive Non-native Species***

The removal of existing vegetation and disturbance of soil during construction could create conditions for the establishment of noxious weeds. Although noxious/invasive weed species were not found within or adjacent to the proposed Project area, preventative measures will be implemented to prevent the spread of noxious weeds during the construction activities, as well as during restoration and reclamation efforts, as outlined in the Noxious Weed Management Plan.

The management of noxious weeds will be considered throughout all stages of the proposed Project including, (1) educating all construction personnel regarding infested areas and preventative measures, (2) specific mitigation measures to prevent the spread of noxious weeds, (3) pre- and post-construction

treatment methods to be applied in areas of known weed infestation. By implementing mitigation measures to prevent noxious weeds, impacts from the proposed action would be minimal.

No Action Alternative: The ROW would not be issued and there would be no surface disturbance at or within the vicinity of the proposed Project. Therefore, there would be no increased potential for the spread of invasive non-native species or noxious weeds from construction and operation of the proposed Project.

Mitigation: Mitigation measures are discussed in the Noxious Weed Management Plan.

## **2.6 Wildlife**

Proposed Action: The primary direct and short-term impact of construction activities on wildlife would be the removal or disturbance of habitat and displacement or loss of individual animals. The removal of desert vegetation would have a localized but long-term impact on wildlife. Many of the species inhabiting the area have adapted to the resources available within the immediate valley.

Individuals could potentially be lost due to road kills by construction and maintenance vehicles, trapping in burrows collapsed by vehicles or during disposal of soil, and illegal or unauthorized activities associated with increased human presence. Highly mobile species, such as birds, black-tailed jackrabbit, and coyote are less likely to be lost. By limiting the size of the ROW and by locating as much of the construction ROW as possible within areas that were previously disturbed during construction of existing facilities, this will minimize the impact to wildlife in the area. Additionally, biological monitor(s) would be on site during all construction activities to ensure no sensitive species are harmed, further minimizing the impact to wildlife and habitat.

### ***Threatened Endangered and Special Status Species***

#### *Desert Tortoise*

Proposed Action: Potential direct impacts to desert tortoises due to construction of facilities include degradation of habitat and loss of individual animals. Impacts could also result from increased levels of noise, traffic, equipment movement, and the effect of human presence.

Additional direct impacts include habitat fragmentation and introduction of non-native plant species. Maintenance activities could potentially affect desert tortoise during periodic access to the project area for routine inspection, repairs, and other activities. Individual tortoises could potentially be lost during these activities due to crushing from equipment or vehicles. In addition, tortoise burrows could potentially be disturbed during maintenance activities.

As desert tortoises were located within the project area, protocol provided by the USFWS will be followed. Qualified biologist(s) will be present as monitors during construction to conduct environmental compliance training, monitor construction activities, relocate tortoises as necessary and ensure that project implementation is carried out according to authorizing documents. The permanent generation site will be surrounded by tortoise-proof security fencing, to be installed early in construction so that construction activities will take place within the tortoise-proof enclosure of the

project site. All stipulations and mitigation measures of the final authorizing documents that ensure protection of the desert tortoise will be enforced before, during, and after construction. Additionally, after construction, NV Energy Environmental Services will submit the appropriate Section 7 Compliance Form to the BLM and any supporting documentation if requested (i.e., daily field reports, desert tortoise encounter forms).

No Action Alternative: The ROW would not be issued and there would be no disturbance to desert tortoise from the proposed Project.

Mitigation: Mitigation measures for the desert tortoise will be followed in accordance with the USFWS Biological Opinion 1-5-97-F-251. These mitigation measures include:

- Education in desert tortoise protection measures for construction personnel
- Surveys to remove tortoises from construction zones immediately before construction
- Implementation of a litter control program
- Construction monitoring by qualified biologist
- Payment of mitigation fee for surface disturbance within desert tortoise habitat

Additionally, for the temporary work areas NV Energy will make every attempt to minimize disturbance/utilization of these areas. If disturbance is required, NV Energy will avoid grading activities to the fullest extent practicable, by utilizing other methods that leave existing vegetation in place (such as drive and crush).

NV Energy (including the environmental inspector and biological monitor for the project) will meet with the Authorized Officer and wildlife biologist (in-person or by conference call) at least 5 days prior to beginning each of the following activities: start of construction, commencement of any surface disturbing activities, and prior to utilization of the pulling and tensioning sites.

#### *Banded Gila Monster and Western Chuckwalla*

Proposed Action: Impacts to these two reptiles could include direct loss of individuals and habitat during construction and maintenance activities. Indirect effects could include increased predation by raptors perching on the transmission towers. Some of the mitigation measures implemented to avoid adverse impacts to the desert tortoise will also reduce impacts to the chuckwalla and Gila monster. Since the habitat in the project area is marginal for the chuckwalla, adverse impacts are not expected.

No Action Alternative: The ROW would not be issued and there would be no disturbance to Gila monster or chuckwalla from the proposed Project.

Mitigation: While Gila monsters weren't found in the project area, there is potential habitat. In compliance with Nevada Administrative Codes regarding protection of the Gila monster and chuckwalla, the standard Nevada Department of Wildlife protocols will be followed if these species are encountered during construction activities.

### Burrowing Owl

Proposed Action: Potential impacts to the western burrowing owl would include loss of habitat and could include disturbance of breeding or foraging birds. Loss of individuals including young is possible if construction occurs during the breeding season. The USFWS recommends that burrows or roosting sites not be disturbed when possible, and the construction of artificial burrows nearby when development activities destroy active burrows or roosting sites.

No Action Alternative: The ROW would not be issued and there would be no disturbance to burrowing owls from the proposed Project.

Mitigation: Mitigation measures implemented for the desert tortoise will also reduce impacts to the western burrowing owl. Should construction activities occur between mid-March and August, a qualified biologist will survey for burrowing owl nesting activity. If owl-occupied burrows are located during their nesting or brooding season, burrows will be avoided until the young owls leave the nest or it is determined that the nesting attempt failed.

### ***Migratory Birds***

Proposed Action: As no bird species or nests, active or inactive, were observed during the field visit, the construction is not expected to have an adverse effect on any breeding migratory birds. Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from March 15 through July 30.

No Action Alternative: The ROW would not be issued and there would be no disturbance to migratory birds from the waste heat recovery project.

Mitigation: If construction must occur during the breeding season of migratory birds (March 15th - July 30th) the project area will be surveyed for nests prior to implementation. If a migratory bird nest is found with nestlings present, the nest will be avoided until birds fledge.

## **2.7 Visual Resource Management**

Proposed Action: Visual impacts are identified by assessing the level of contrast that results from the construction and operation of the proposed Project. The Visual Contrast Rating sheets and a visual simulation for this project are provided in Appendix C.

Contrast is a measure of visual change in the landscape which is based on vegetation removal, topographical modification, and introducing new structures in a natural setting. The proposed Project would be constructed immediately adjacent to an existing natural gas compressor station requiring minimal topographic modification and vegetation removal resulting in weak contrast. Therefore impacts to the setting (scenic quality Class C) are anticipated to be low.

Field inventories revealed that residences from the town of Goodsprings would not have views of the project facilities based on topographical screening. Therefore visual impacts associated with the residence of Goodsprings are not anticipated (See Appendix C – Contrast Rating Sheet 1). Impacts would not occur to residential viewers residing in the town of Jean based on the distance (approximately

3 miles) between the town and the proposed Project and the location of the expansion relative to the existing facility - existing facility obscures majority of the expansion (See Appendix C – Contrast Rating Sheet 2). The only affected sensitive viewers are travelers using Highway 161. Due to the proximity of the proposed Project to Highway 161 (approximately 4,000 feet), contrast may be moderate in form and line based on the scale of the proposed facilities. However, because the project would be located in a landscape that has been locally modified with similar features (color and texture contrast would be minimal), would have a ground footing lower in elevation than the existing compressor station, would match in color the existing modified landscape and vegetation and topographical modification would be minimal, overall impacts to the casual viewer traveling along Highway 161 are anticipated to be low (See Appendix C – Contrast Rating Sheet 3 and Simulation 1).

The proposed expansion is anticipated to comply with the VRM Class II Management Objective (RMP VR-1-a 1998) based on the project description, design and the location of the facilities (i.e. immediately adjacent to similar industrial features with a background of desert hills). Overall project contrast is anticipated to be low, thus the local landscape character (modified Mojave Desert basin) will be retained.

No Action Alternative: The ROW would not be issued and there would be no change in the visual setting at or within the project area.

Mitigation: No additional mitigation required.

## **2.8 Waste – Hazardous and Solid**

Proposed Action: Hazardous materials will be stored and used during the construction and operation of the facility. BMPs will be utilized when handling and working with any hazardous material. BMPs will be incorporated during construction and operations of the facilities. Information regarding how hazardous and solid waste will be handled during these activities, and site-specific BMP's are provided in Section 2.2.

No Action Alternative: The ROW would not be issued and there would be no hazardous or solid waste generated from construction and operation of the proposed Project.

Mitigation: No additional mitigation required.

## **2.9 Water Quality**

Proposed Action: There are no perennial surface water bodies or streams within the project area. Surface water occurs as ephemeral run off or from brief storm events that are channeled through the natural drainage washes of the Goodsprings Valley.

As part of construction of the proposed project, a construction Storm Water Pollution Prevention Plan (SWPPP) as required by NDEP will be implemented to aide in the reduction of construction related silt in nearby washes. In addition, other Best Management Practices (BMPS) are required in this SWPPP to assist in the mitigation and reduction of storm water pollutants into existing ephemeral washes. This

would include the proper handling of wastewater associated with fire protection system testing and related pipe or hydrant testing.

For operations of the proposed facility, all storm water runoff will be directed and dissipated by structural BMP's incorporated into the design of the facility. Structural BMPs would meet the requirements of the Clark County Regional Flood Control District. No jurisdictional surface waters are expected to be impacted by the proposed project.

The proposed project has no potential for direct contact with groundwater. The proposed project is expecting to utilize groundwater only during construction as a means of dust control. Construction groundwater used for dust control would come from a permitted source and be of quality that would not impact local resources. The contractors working on the project would be responsible for bringing water to the project area, which may involve trucks, a J-stand, or other acceptable water delivery methods. Water spray during dust control application would be controlled so that pooling would be avoided to the extent possible.

No Action Alternative: The ROW would not be issued and there would be no impacts to water quality from construction and operation of the proposed Project.

Mitigation: No additional mitigation required.

### 3 CUMULATIVE IMPACTS

#### 3.1 Cumulative Impact Assessment

The CEQ (40 CFR 1508.7) defines cumulative impacts as:

*“...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”*

These actions include current and projected area development, management activities and authorizations on public lands, land use trends, and applicable industrial/infrastructure components. These past, present, and reasonably foreseeable future actions are analyzed to the extent that “they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have an additive and significant relationship to those effects.”

Each affected resource, ecosystem, or human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters. The most effective cumulative effects analysis focuses on what is needed to ensure long-term productivity or sustainability of the resource.

The extent of the cumulative impacts study area varies with each resource, based on the geographic or biologic limit of that resource. For the purposes of this analysis, the cumulative impact Region of Influence includes the area adjacent to the proposed Project, nearby off-site areas subject to disturbance from the Proposed Action, and those areas beneath new facilities that would remain inaccessible for the life of the project.

In addition, the length of time for cumulative effects analysis varies according to the duration of impacts from the Proposed Action on the particular resource. The timeframe for the cumulative impact analysis begins at the time of project construction (assume 2010) and extends sufficiently forward in time with consideration of past trends and activities on current and reasonably foreseeable future actions and trends that may affect the sustainability of the resource.

Information about past, present, and reasonably foreseeable future activities in the cumulative resource ROI were gathered from various agencies (e.g. BLM, USFWS, Clark County); adopted plans; environmental documents; and personal communications with public agencies and utility companies.

Project-related actions that were considered include the following:

- Applications that have been submitted to the BLM or other agencies and are in various stages of the approval or permitting process as of July 2009;
- Actions that have been approved or are currently discussed in the public realm and have a reasonable likelihood of being implemented;

- Actions included in an adopted capital improvement program, general plan, regional transportation plan, or similar plan;
- Actions anticipated as later phases of approved activities; or
- Actions funded by money budgeted by a public agency.

When analyzing the cumulative effects of each of the interrelated projects or actions, the BLM considers mitigation measures required by other authorizing federal, state, or local agencies as a condition of approval. For example, the project area is located in a Desert Tortoise Large Scale Translocation Area. Environmental stipulations associated with that action, would be applicable to the proposed Project, and any future proposed action in the area.

### **3.2 Existing and Planned Conditions**

The Proposed Action involves granting a new and amended ROW and temporary rights-of-way for the construction, operation and maintenance of the Goodsprings Energy Recovery Station and associated facilities. The proposed Project would be located south of State Highway 161, approximately 1 ½ miles southeast of the community of Goodsprings, Nevada. The generation and interconnection portion of the proposed Project would overlie an existing BLM ROW grant (N-42581) authorized to Kern River for gas compressor and transmission facilities. The reconductoring of the existing overhead distribution line would occur within NV Energy's existing authorized ROW for this line, with new temporary work areas (i.e., access, pull and tension) which would be restored after construction.

Three new WHOH would be installed near each of the existing exhaust stacks at the Kern River Compressor Station. The new facility would be located immediately north of, and adjacent to, the Kern River Compressor Station fence line. Approximately three acres would be graded and leveled to accommodate the new facility and appurtenant components. The project footprint would be approximately 5 feet below the existing roadway and Kern River's fenced yard.

In addition, a new underground 12kV distribution line, approximately 250 feet in length, would be installed to connect the OEC facility to an existing overhead 12kV distribution line, immediately west of the generation site. To accept this new load on to the grid, the entire 12kV distribution line would be reconductored for a distance of approximately 1.25 miles. The reconductoring of this line would occur as a maintenance activity under NV Energy's existing ROW grant, and terms and conditions, authorized by the BLM.

### **3.3 Interrelated Projects or Actions to be Analyzed**

**Table 5-1** lists past, present, or reasonably foreseeable interrelated projects, BLM activities, or environmental condition in the project area. These were evaluated to determine if they were: 1) relevant to potential impacts, 2) within the project area of influence, and 3) of a magnitude that could potentially result in a cumulative impact.

<b>Table 3-1 Existing Conditions and Reasonably Foreseeable Future Actions</b>		
<b>Action</b>	<b>Description</b>	<b>Area affected</b>
<b>Past and Present Actions</b>		
Kern River Natural Gas Pipeline	Approximately 276 miles in Nevada	Goodsprings loop adjacent to project site
Kern River Compressor Station	Constructed in 1992	The proposed Project would include equipment installation at the existing site.
NV Energy 12 kV Distribution Line	12 kV distribution line	Adjacent to project site; line to be reconducted as part of the Proposed Action
Goodsprings – Jean 69 kV Transmission Line	69 kV transmission line	Located north of State Highway 161; new overhead fiber optic line to be installed on approximately 3 miles of this existing line as a maintenance activity under existing ROW grant.
Arden-Bighorn 230 kV Transmission Line	230 kV transmission line	The new fiber optic line would interconnect the Jean Substation to NV Energy’s existing telecommunication network on this line.
State Highway 161	State highway	Located approximately 1 mile north of the proposed Project site.
<b>Reasonably Foreseeable Future Actions</b>		
Yellow Pine Rail Trail	Development of a multi-use, non-motorized trail along a former railroad gauge line paralleling State Highway 161.	The planning area includes SR 161 from Jean to Goodsprings and extends to the area surrounding the historic Yellow Pine Mine.
Solar Energy Projects	Development of utility scale solar projects in the Goodsprings and Ivanpah Valleys	Six ROW applications have been filed for the development of solar projects within 10 miles of the proposed Project site. As of June 2009, no grants have been issued for solar projects in Nevada.
Wind Energy Projects	Development of utility scale wind projects on Table Mountain	Two ROW grants have been issued for wind study and data collection projects on Table Mountain. One application for a commercial wind farm is pending a Record of Decision on the 2002 Final EIS.

### **3.4 Summary of Cumulative Impacts**

The Proposed Action, when viewed with other past, present, and reasonably foreseeable actions, and implementation of management BMP’s, would not have an additive effect on geologic and soil resources, socioeconomic resources, land use, noxious weeds, hazardous and solid waste, or known cultural and historic resources within the cumulative impact study area. The degree to which the Proposed Action would impact paleontological resources is unknown, as many of these resources are only discovered through grading or excavation activities during construction. Primarily, additive effects to most resources would be realized during construction and would be temporary in nature. The implementation of BMPs and stringent environmental protection measures during construction would limit additive impacts to the surrounding environment.

The discussion of the cumulative impacts of the proposed Project on potentially affected resources is provided below. Overall, the incremental impact of the Proposed Action would be minimal when added to other past, present, and reasonably foreseeable future actions. Construction and operation of the proposed Project would not contribute substantially to cumulative impacts on the environment.

### ***Air Quality***

Incremental effects that result from the Proposed Action's short-term impacts, along with the past, present, and reasonably foreseeable actions, would have minimal cumulative effects on air quality. The EPA is expected to issue new non-attainment designations in 2010, so Clark County does not have any State Implementation Plan or plan requirements under the revised NAAQS at this time (DAQEM 2008).

### ***Botanical and Wildlife Resources***

Cumulative effects to botanical and wildlife resources are relative to the amount of impact in the cumulative analysis area and would be proportional to the amount of ground disturbance within the specific project area. In particular, the cumulative effect of several projects constructed in the same area, is likely to produce impacts that will vary to some extent depending upon proximity of additional modifications. Increasing numbers of utility projects and access roads in areas of wildlife habitat are an important consideration. Such impacts can be minimized through the concentration of linear projects (transmission lines, pipelines, etc.) into designated corridors with the goal of reducing habitat fragmentation. Any proposed action within the cumulative impacts region of influence requires compliance with mitigation measures for the desert tortoise in accordance with the USFWS Biological Opinion 1-5-97-F-251.

### ***Visual Resources***

Implementation of the Proposed Action, along with past, present, and reasonably foreseeable actions, may have direct and long-term minimal effects on visual resources. Future recreation uses along the proposed Yellow Pine Rail Trail would be minimally impacted by the proposed project. Development of proposed wind and solar facilities, if approved and constructed, would modify the setting in the vicinity of the proposed project further degrading scenic quality.

#### **4 LIST OF PREPARERS AND REVIEWERS**

This EA was prepared at the direction of the BLM Las Vegas field office, Nevada, by EPG, under a contract with NV Energy. The following is a list of individuals responsible for the preparation of the EA:

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**APPENDIX A  
RARE PLANT SURVEY REPORT FOR THE  
GOODSPRINGS ENERGY RECOVERY STATION  
PROJECT**

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**FIELD FINDINGS REPORT**

**GOODSPRINGS WASTE HEAT RECOVERY  
PROJECT**

**RARE PLANT SURVEY**



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## 1.0 INTRODUCTION

On May 11, 2009, a BLM approved botanist conducted a rare plant survey on the existing Kern River gas compressor and transmission facilities right-of-way (N-42581) immediately north of the existing Kern River station (Figure 1). Rare plant surveys were also conducted in the proposed right-of way from Kern River station north along the existing overhead distribution line to the Jean 12kV distribution line (N-54236) plus 2 locations under request for special permit for pull and tension sites (Figures 2-4). The entire survey area is approximately 17 acres. The project area is located on land administered by the Bureau of Land Management (BLM).

The project area is located in typical Mojave Desert scrub dominated by *Larrea tridentata* (creosote bush) and *Ambrosia dumosa* (white bursage). The survey area falls within habitat for the BLM sensitive species *Penstemon bicolor* ssp. *bicolor* (yellow twotoned beardtongue) and known populations exist in the area. BLM is required to perform abundance surveys for cactus and yucca species as they are protected by state law, NRS 527.060 – 527.120. This abundance survey was conducted simultaneously with the rare plant surveys.

The survey area had minimal disturbance at the time the surveys were conducted.



Figure 1. Survey area immediately north of Kern River station (photo taken from east looking west).



Figure 2. Survey area along the existing overhead distribution line (view looking north).



Figure 3. Survey area northwest of Kern River station (view looking southeast).



Figure 4. Survey area at north end of overhead distribution line (view looking northwest).

## 1.0 METHODS

The BLM provided a botanical list including *Penstemon bicolor* ssp. *bicolor* (yellow twotoned beardtongue), *Acacia greggii* (catclaw acacia), *Prosopis glandulosa* (honey mesquite), and all cactus and yucca species. If a target species was located a GPS point was taken using WGS 1984. For cactus and yucca species, plants were estimated within three separate portions of the survey area. Transects were spaced 10 meters apart to provide enough coverage and to ensure that no target species were missed.

## 2.0 RESULTS

The project area was dominated by Mojave Desert scrub community type with the appearance of Joshua tree (*Yucca brevifolia*) marking its lower elevational range. The Mojave Desert scrub community was dominated by shrub vegetation including, creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), range rhatany (*Krameria erecta*), Mojave yucca (*Yucca schidigera*), and Torrey ephedra (*Ephedra torreyana*). A total of 62 different plant species were recorded throughout the project area (Appendix A). Several cactus species were observed throughout the project area including, silver cholla (*Opuntia echinocarpa*), beavertail cactus (*O. basillaris*), old man pricklypear (*O. erinacea*), pencil cholla (*O. ramosissima*), hedgehog cactus (*Echinocereus engelmannii*), Mojave mound cactus (*E. triglochidiatus*), and cottontop (*Echinocactus polycephalus*). It was estimated that cacti density in the

project area was 10 cacti per acre (Appendix B). Yucca density was estimated at 41 plants per acre (Appendix B). Additional species were observed in wash habitat including, *Hymenoclea salsola*, *Salvia dorii*, *Penstemon palmeri*, *Ambrosia eriocentra*, and *Chrysothamnus paniculatus*. A small patch of the invasive species *Sisymbrium orientale* was also observed in the wash. No catclaw acacia or honey mesquite individuals were observed in the survey area. Palmer's penstemon plants were observed within the survey area, but no obvious yellow twotoned penstemon plants. All open penstemon flowers present at the time of the survey were pink. Some hybrids between the two species have both pink and yellow flowers and are difficult to discern depending on the age of the flower or degree of hybridization. Plants were recorded as Palmer's penstemon.

Annual vegetation was sparsely distributed as is typical for this elevation; woolly plantain (*Plantago ovata*) and desert pincushion (*Chaenactis stevioides*) were dominant as well as non-native annuals Arabian grass (*Schismus sp.*) and red brome (*Bromus madritensis v. rubens*).

#### **4.0 IMPACTS**

Proposed Action: The proposed action in the area immediately north of the Kern River station would remove the vegetation on approximately 4 acres of ground surface and disturbance of vegetation northwest of the station (pull and tension site) on approximately 2.3 acres and an additional 1.8 acre disturbance area (pull and tension site) where the overhead distribution line meets the Goodsprings – Jean transmission line. The extent of disturbance to vegetation from “drive and crush” along the existing overhead distribution line depends on the accuracy of the vehicle moving in and out on the same path. The total disturbance would be minor and therefore direct impacts to vegetation would be negligible. The limited scope of construction and occupancy associated with installation and maintenance of the proposed project would result in site-specific disturbance to individual plants and local habitat within the project area. This alternative would have minor, adverse, long-term impacts on soils and vegetation.

No Action Alternative: The ROW would not be issued and there would be no disturbance to vegetation from the waste heat recovery project.

#### **5.0 MITIGATION**

Mitigation measures are specific actions designed to minimize, reduce, or eliminate impacts of alternatives and to protect resources. The following mitigation for actions connected with the waste heat recovery project would be implemented under the action alternative; a resource specialist will be on-site to ensure all cacti, yucca, and sensitive plant species located along the existing overhead distribution line are avoided to the greatest extent practicable and that potential impacts to the habitat are minimized; cacti and yucca species will be salvaged and relocated or transplanted back into restored temporary work areas after project completion; vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area concentrating on tracks, feet and tires, and on the undercarriage; vehicle tracks created in previously undisturbed habitat will be raked out along the overhead distribution line; seeds collections will be made from existing yellow twotoned beardtongue populations; staging areas will be confined to previously disturbed areas; vehicular access for construction and maintenance will be confined to the existing road.

Cumulative Effects: The proposed project would not appreciably add to the cumulative effects on soils and vegetation.

## **6.0 CONCLUSION**

The project area is located in two toned beardtongue habitat, which is known to co-occur and hybridize with Palmer's penstemon. Eleven Palmer's penstemon plants were observed within the survey area. All open flowers present at the time of the survey were pink. Some hybrids between the two species have both pink and yellow flowers and are difficult to discern depending on the age of the flower or degree of hybridization. Since the project area occurs in twotoned penstemon habitat, the BLM may require mitigation to include seed collections from existing twotoned penstemon populations. This area supports a significant cactus community and salvage may be required.

## Appendix 1 – Plant Species List for Waste Heat Recovery Project – Goodsprings, NV

### PERENNIALS

*Achnatherum speciosum* - ricegrass  
*Adenophyllum cooperi* – Cooper’s glandbush  
*Ambrosia dumosa* – white bursage  
*Ambrosia eriocentra* – woolly bursage  
*Amphipappus fremontii* - chaffbush  
*Atriplex canescens* – four wing saltbush  
*Baileya multiradiata* – desert marigold  
*Buddleja utahensis* – Panamint butterflybush  
*Chrysothamnus paniculatus* – Mojave rabbitbrush  
*Delphinium parishii* –Parish’s larkspur  
*Echinocactus polycephalus* – cottontop cactus  
*Echinocereus engelmannii* – hedgehog cactus  
*Echinocereus triglochidiatus* – Mojave mound cactus  
*Encelia virginensis* – Virgin encelia  
*Ephedra torreyana* – Torrey ephedra  
*Eriogonum fasciculatum* – California buckwheat  
*Eriogonum inflatum* – desert trumpet  
*Erioneuron pulchellum* - fluffgrass  
*Grayia spinosa* - hopsage  
*Gutierrezia sarothrae* - snakeweed  
*Hymenoclea salsola* - cheesebush  
*Krameria erecta* – range rhatany  
*Krascheninnikovia lanata* - winterfat  
*Larrea tridentata* – creosote bush  
*Lepidium fremontii* – desert alyssum  
*Lycium andersonii* – Anderson’s wolfberry  
*Menodora spinescens* – spiny menodora  
*Mirabilis bigelovii* – desert four o’clock  
*Oenothera sp.* – evening primrose  
*Opuntia basillaris* - beavertail  
*Opuntia echinocarpa* – silver cholla  
*Opuntia erinacea* – old man pricklypear  
*Opuntia ramosissima* – pencil cholla  
*Penstemon palmeri* – Palmer’s penstemon  
*Phacelia crenulata* – notchleaf phacelia  
*Pleuraphis rigida* – big galleta grass  
*Psilostrophe cooperi* - paperflower  
*Salazaria mexicana* - bladdersage

*Salvia dorii* – **desert sage**  
*Sisymbrium orientale* - **hedgemustard**  
*Sphaeralcea ambigua* - **globemallow**  
*Sphaeralcea emoryi* – **Emory’s globemallow**  
*Stephanomeria pauciflora* – **wire lettuce**  
*Thymophylla pentachaeta* – **scale glandbush**  
*Tiquilia canescens* – **woody tiquilia**  
*Xylorhiza tortifolia* – **desert aster**  
*Yucca brevifolia* – **Joshua tree**  
*Yucca schidigera* – **Mojave yucca**

#### **ANNUALS**

*Amsinckia tessellata* - **fiddleneck**  
*Bromus madritensis* var. *rubens* – **red brome**  
*Calycoseris wrightii* - **tackstem**  
*Chaenactis stevioides* – **desert pincushion**  
*Chorizanthe rigida* – **spiny herb**  
*Descurainia pinnata* – **pinnate tansymustard**  
*Eriogonum trichopes* – **little trumpet**  
*Erodium cicutarium* - **filaree**  
*Lepidium lasiocarpum* – **peppergrass**  
*Plantago ovata* – **woolly plantain**  
*Rafinesquia neomexicana* – **desert chicory**  
*Schismus* sp. – **Arabian/Mediterranean grass**  
*Streptanthella longirostris* – **longbeak twistflower**

## Appendix 2. Cacti and Yucca abundance

Area 1*		Area 2**		Area 3***	
<i>Echinocactus polycephalus</i>	3	<i>Echinocactus polycephalus</i>	13	<i>Echinocactus polycephalus</i>	3
<i>Echinocereus engelmannii</i>	2	<i>Echinocereus engelmannii</i>	1	<i>Echinocereus engelmannii</i>	15
<i>Opuntia basillaris</i>	5	<i>Opuntia basillaris</i>	1	<i>Opuntia basillaris</i>	1
<i>Opuntia echinocarpa</i>	5	<i>Opuntia echinocarpa</i>	2	<i>Opuntia echinocarpa</i>	21
<i>Yucca brevifolia</i>	7	<i>Yucca schidigera</i>	23	<i>Opuntia erinacea</i>	4
<i>Yucca schidigera</i>	114			<i>Opuntia ramosissima</i>	4
				<i>Opuntia triglochidiatus</i>	1
				<i>Yucca brevifolia</i>	62
				<i>Yucca schidigera</i>	119

\* Area 1 is the area immediately north of the Kern River natural gas compressor station (WGS 1984; 643,404E; 3,964,031N).

\*\* Area 2 is the pull and tension site immediately west of the Kern River station (WGS 1984; 643,343E; 3,964,152N).

\*\*\*Area 3 is the pull and tension site located at the north end of the overhead distribution line where it meets the Goodsprings – Jean transmission line (WGS 1984; 643,295E; 3,966,043N).

### Appendix 3. GPS coordinates for plant species found during rare plant surveys

Species	GPS coordinates (WGS 1984)	Number of plants
<i>Penstemon palmeri</i>	643,325E; 3,965,104N	5
<i>Penstemon palmeri</i>	643,344E; 3,965,480N	5
<i>Penstemon palmeri</i>	643,343E; 3,964,932N	1
<i>Sisymbrium orientale</i>	643,329E; 3,964,954N	10-20

**APPENDIX B**  
**DESERT TORTOISE SURVEY REPORTS FOR THE**  
**GOODSPRINGS ENERGY RECOVERY STATION**  
**PROJECT**

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**USFWS 2008 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET**

Date of survey: 05-11-09 Survey biologist(s): Pesche  
(day, month, year)

Site description: Goodsprings Water heat project - Ed Goodsprings  
(project name and size; general location)

County: Clark Quad: \_\_\_\_\_ Location: \_\_\_\_\_  
(UTM coordinates, lat-long, and/or TRS)

Transect number: \_\_\_\_\_ Type of survey: 100% of 4 acre area + along drive + Crush Route  
(100% coverage/probabilistic sampling; project acres to be surveyed; transect configuration)

GPS Start-point: 350 48.651' 3475 ft Start time: 9:00 am  
(easting, northing, elevation)

GPS End-point: \_\_\_\_\_ End time: 1:45 am/pm  
(easting, northing, elevation)

Start Temp: 82 °C Weather: Sunny Clear no wind

End Temp: 90 °C

**Live Tortoises**

Detection number	GPS location Easting Northing		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL >160-mm? <small>(Yes, No or Unknown)</small>	Sex <small>(Male, Female, or Unknown)</small>	Existing tag # and color, if present
1	<u>1150643927</u>	<u>3964130</u>	<u>930?</u>	<u>in burrow waypoint 008</u>	<u>unk</u>	<u>unk</u>	<u>N/A</u>
2							
3							
4							
5							
6							
7							
8							

**Tortoise Sign (burrows, scats, carcasses, etc)**

Detection number	GPS location Easting Northing		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
1	<u>1150643413</u>	<u>3964041</u>	<u>Burrow</u>	<u>Partially collapsed not occupied waypoint 001 6in wide</u>
2	<u>1150643458</u>	<u>3964062</u>	<u>Scat</u>	<u>Scat is in good cond. somewhat shiny but not too much shine left 002</u>
3	<u>1150643460</u>	<u>3964084</u>	<u>Carcas</u>	<u>Disarticulated/scattered bleached bones few scutes photos 96 &amp; 97 003</u>
4	<u>1150643487</u>	<u>3964091</u>	<u>Burrow</u> <u>Not occ</u>	<u>not occupied in good shape has been used in wind</u>
5	<u>1150643481</u>	<u>3964106</u>	<u>Burrow</u> <u>Not occ</u>	<u>Used this season (ant see back 004)</u>
6	<u>1150643422</u>	<u>3964100</u>	<u>Burrow</u> <u>maybe occ-flagged</u>	<u>3ft collapsed - unable to see end Burrows 7in wide</u> <u>is usable &amp; has been used this season 005</u>
7	<u>1150643458</u>	<u>3964111</u>	<u>Burrow</u>	<u>Usable burrow has been used 6in wide</u> <u>recently does not appear to be occ 006</u>
8	<u>1150643427</u>	<u>3964130</u>	<u>Burrow</u> <u>occupied</u>	<u>partially collapsed not occ not used this season</u> <u>newly dug recently used 6in wide</u> <u>Flagged 008</u>

**USFWS 2008 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET**

Date of survey: \_\_\_\_\_ Survey biologist(s): \_\_\_\_\_  
(day, month, year)

Site description: \_\_\_\_\_  
(project name and size; general location)

County: \_\_\_\_\_ Quad: \_\_\_\_\_ Location: \_\_\_\_\_  
(UTM coordinates, lat-long, and/or TRS)

Transect number: \_\_\_\_\_ *See pgs* Type of survey: \_\_\_\_\_  
(100% coverage/probabilistic sampling; project acres to be surveyed; transect configuration)

GPS Start-point: \_\_\_\_\_ Start time: \_\_\_\_\_ am/pm  
(easting, northing, elevation)

GPS End-point: \_\_\_\_\_ End time: \_\_\_\_\_ am/pm  
(easting, northing, elevation)

Start Temp: \_\_\_\_\_ °C Weather: \_\_\_\_\_

End Temp: \_\_\_\_\_ °C

**Live Tortoises**

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL >160-mm? <small>(Yes, No or Unknown)</small>	Sex <small>(Male, Female, or Unknown)</small>	Existing tag # and color, if present	photos
	Easting	Northing						
1	1150643475	3964188	10:15am	Not in burrow	2 1/2 in	F	N/A 013	101-106
2	*							
3								
4								
5								
6								
7								
8								

**Tortoise Sign (burrows, scats, carcasses, etc)**

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1	1150643425	3964133	Burrow	Not occupied maybe used this season 6in wide cant see back 009
2	1150643406	3964134	Pellet	Not occ ≈ 10 in deep has been used this season 10 in wide 010
3	1150643417	3964159	Burrow	fully collapsed not usable 8in wide 011
4	1150643498	3964184	outside ent boundary Burrow Plugged	large burrow 11 in wide used this season might be occ. Curves out see back 012
5	1150643461	3964196	Pellet	Not occ. ≈ 12 in deep has been used Recently 014
6	1150643433	3964180	Pellet	Does not occ. Maybe has been used this season 11 in deep 10 in wide 015
7	1150643369	3964142	Pellet	10 in deep used this season not occ 017
8	1150643427	3964130	Burrow	Unocc 8in wide unable to see back not used awhile used this season 016

**USFWS 2008 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET**

Date of survey: \_\_\_\_\_ Survey biologist(s): \_\_\_\_\_  
(day, month, year)

Site description: \_\_\_\_\_  
(project name and size; general location)

County: \_\_\_\_\_ Quad: \_\_\_\_\_ Location: \_\_\_\_\_  
(UTM coordinates, lat-long, and/or TRS)

Transect number: \_\_\_\_\_ Type of survey: \_\_\_\_\_  
(100% coverage/probabilistic sampling; project acres to be surveyed; transect configuration)

GPS Start-point: \_\_\_\_\_ Start time: \_\_\_\_\_ am/pm  
(easting, northing, elevation)

GPS End-point: \_\_\_\_\_ End time: \_\_\_\_\_ am/pm  
(easting, northing, elevation)

Start Temp: \_\_\_\_\_ °C Weather: \_\_\_\_\_

End Temp: \_\_\_\_\_ °C

**Live Tortoises**

Detection number	GPS location		Time	Tortoise location <small>(in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL >160-mm? <small>(Yes, No or Unknown)</small>	Sex <small>(Male, Female, or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing					
1							
2							
3							
4							
5							
6							
7							
8							

**Tortoise Sign (burrows, scats, carcasses, etc)**

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1	115 064 3330	3963968	Burrow	unocc - but cut see back used this season 10 in wide 018
2	115 064 3339	3964194	Burrow	unocc but cut see end used this season 8 in across 019
3	115 064 333	3964212	Burrow	unocc cut see end 12 in wide used this season but not recent 020
4	115 064 3334	3964956	Burrow	collapsed un usable 021
5	115 064 3313	3965686	Burrow	collapsed unusable 022
6	115 064 3313	3965767	Pellet	~1 ft deep x 5 in wide 023
7	115 064 3314	3965775	Scat	not shiny 024
8	115 064 3291	3966071	Burrow	collapsed not usable 025

Page: 3 of 4

Date of survey: 5-11-09

Transect number:

**USFWS 2008 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET**

Date of survey: \_\_\_\_\_ Survey biologist(s): \_\_\_\_\_  
(day, month, year)

Site description: \_\_\_\_\_  
(project name and size, general location)

County: \_\_\_\_\_ Quad: \_\_\_\_\_ Location: \_\_\_\_\_  
(UTM coordinates, lat-long, and/or TRS)

Transect number: \_\_\_\_\_ Type of survey: \_\_\_\_\_  
(100% coverage, probabilistic sampling; project acres to be surveyed; transect configuration)

GPS Start-point: \_\_\_\_\_ Start time: \_\_\_\_\_ am/pm  
(easting, northing, elevation)

GPS End-point: \_\_\_\_\_ End time: 145 am/pm  
(easting, northing, elevation)

Start Temp: \_\_\_\_\_ °C Weather: \_\_\_\_\_

End Temp: \_\_\_\_\_ °C

**Live Tortoises**

Detection number	GPS location		Time	Tortoise location <small>(in burrow, all of tortoise beneath plane of burrow opening, or not in burrow)</small>	Approx MCL >160-mm? <small>(Yes, No or Unknown)</small>	Sex <small>(Male, Female, or Unknown)</small>	Existing tag # and color, if present
	Easting	Northing					
1	1150643345	3964518	130 pm	in burrow - all of BT beneath plane of burrow opening	unk	m	unk off 111 to 115 photos
2							
3							
4							
5							
6							
7							
8							

**Tortoise Sign (burrows, scats, carcasses, etc)**

Detection number	GPS location		Type of sign <small>(burrows, scats, carcass, etc)</small>	Description and comments
	Easting	Northing		
1	1150643261	3966143	Burrow	Burrow - large 14 in wide x 6-8 in high some sign of recent use many have been filled over by a mound but see back of 10 in wide recent use a little round adaptation is not quite right however K-02-2
2	1150643343	3966155	Burrow	
3	115643346	3966049	Burrow	Partially collapsed not usable w/out excavation 028
4				
5				
6				
7				
8				

**APPENDIX C**  
**VISUAL RATING CONTRAST SHEETS AND VISUAL**  
**SIMULATION FOR THE GOODSPRINGS ENERGY**  
**RECOVERY STATION PROJECT**

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<b>Date:</b> June 11, 2009
<b>District:</b> Southern Nevada
<b>Resource Area:</b> Jean/Roach Lake SRM
<b>Activity (program):</b> Recovered Energy Generation Plant

<b>Project Name:</b> Goodsprings Waste Heat Recovery Project  <b>Key Observation Point :</b> 1 Sandy Valley Road/Highway 161  <b>VRM Class:</b> II	<b>Location</b>  Township 24S  Range 58E  Section 36	<b>Location Sketch</b> 
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### Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
<b>Form</b>	Flat terrain (foreground), Rolling (middle ground) mountainous (background)	Distinct organic forms, regular Irregular horizontal	Small/vertical, geometric
<b>Line</b>	Straight (foreground) Undulation, horizontal (middle/background)	Regular, vertical to horizontal	Weak vertical
<b>Color</b>	Brown Dull Chroma (background)	Olive, grey-green	Light beige
<b>Texture</b>	Fine	Fine	Fine

### Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
<b>Form</b>	Flat terrain (foreground), Rolling (middle ground) mountainous (background)	Distinct organic forms, regular Irregular horizontal	Small/vertical, geometric
<b>Line</b>	Straight (foreground) Undulation, horizontal (middle/background)	Regular, vertical to horizontal	Weak vertical
<b>Color</b>	Brown Dull Chroma (background)	Olive, grey-green	Light beige
<b>Texture</b>	Fine	Fine	Fine

### Degree of Contrast

Degree of Contrast		Features												
		Landform/Water Body				Vegetation				Structures				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
Elements	Form			X					X					X
	Line			X					X					X
	Color			X					X					X
	Texture			X					X					X

**Does project design meet visual resource management objectives?**

**Additional mitigating measures recommended?**

**Evaluators Names:**

Lori Tuchman, Marc Schwartz

<b>Date: June 11, 2009</b>
<b>District: Southern Nevada</b>
<b>Resource Area: Jean/Roach Lake SRM</b>
<b>Activity (program): Recovered Energy Generation Plant</b>



*Southeast View from Sandy Valley Road*

Weak contrast is created by project construction of a modified setting in class II landscape. Contrasts are anticipated to occur when project construction is completed. Structure form and line are the driving elements for the proposed project contrast. The proposed structure is to match the color of the existing structures. The construction of the project will remove existing vegetation creating a horizontal contrast similar to the existing facility but at a smaller scale. Overall visual impacts are anticipated to be low from this point of view.

<b>Date:</b> June 11, 2009
<b>District:</b> Southern Nevada
<b>Resource Area:</b> Jean/Roach Lake SRM
<b>Activity (program):</b> Recovered Energy Generation Plant

<b>Project Name:</b> Goodsprings Waste Heat Recovery Project  <b>Key Observation Point :</b> 2 Gold Strike Casino/U.S. Highway 15  <b>VRM Class:</b> II	<b>Location</b>  Township    25S  Range        59E  Section       6	<b>Location Sketch</b> 
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### Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
<b>Form</b>	Flat terrain (foreground), Rolling, mountainous (background)	Distinct organic forms	Small/vertical, geometric
<b>Line</b>	Straight (foreground) Undulation, horizontal (background)	Regular, horizontal	Weak vertical
<b>Color</b>	Brown	Olive, grey-green	Light beige
<b>Texture</b>	Fine	Fine	Fine

### Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
<b>Form</b>	Flat terrain (foreground), Rolling, mountainous (background)	Distinct organic forms	Small/vertical, geometric
<b>Line</b>	Straight (foreground) Undulation, horizontal (background)	Regular, horizontal	Weak vertical
<b>Color</b>	Brown	Olive, grey-green	Light beige
<b>Texture</b>	Fine	Fine	Fine

### Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Degree of Contrast	Elements												
	Form			X									X
	Line			X									X
	Color			X									X
	Texture			X									X

**Does project design meet visual resource management objectives?**

**Additional mitigating measures recommended?**

**Evaluators Names:**  
Lori Tuchman, Marc Schwartz

<b>Date: June 11, 2009</b>
<b>District: Southern Nevada</b>
<b>Resource Area: Jean/Roach Lake SRM</b>
<b>Activity (program): Recovered Energy Generation Plant</b>



*Northwest view from Gold Strike Casino, Jean Nevada*

Weak contrast is created by project construction of a modified setting in class II landscape. Contrasts are anticipated to occur when the project is completed. Structure form is the driving element for the proposed contrast. The proposed structure is to match the color of the existing structures. The project is located approximately five miles from this viewpoint (U.S. Highway 15) and overall visual impacts are anticipated to be low.

<b>Date:</b> June 11, 2009
<b>District:</b> Southern Nevada
<b>Resource Area:</b> Jean/Roach Lake SRM
<b>Activity (program):</b> Recovered Energy Generation Plant

<b>Project Name:</b> Goodsprings Waste Heat Recovery Project  <b>Key Observation Point :</b> 3 Sandy Valley Road/Highway 161  <b>VRM Class:</b> II	<b>Location</b>  Township    24S  Range        59E  Section      31	<b>Location Sketch</b> 
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### Characteristic Landscape Description

	<b>Landform/Water</b>	<b>Vegetation</b>	<b>Structures</b>
<b>Form</b>	Flat terrain (foreground), Rolling, mountainous (background)	Distinct organic forms, regular Irregular horizontal	Large/vertical, geometric Long linear, cylindrical
<b>Line</b>	Straight and rugged, (foreground) Undulation, angular/jagged, horizontal (background)	Regular, vertical to horizontal	Bold horizontal Straight vertical
<b>Color</b>	Brown, tan	Olive, grey-green	Light beige
<b>Texture</b>	Fine	Medium	Smooth/fine

### Proposed Activity Description (Facility)

	<b>Landform/Water</b>	<b>Vegetation</b>	<b>Structures</b>
<b>Form</b>	Flat terrain (foreground), Rolling, mountainous (background)	Distinct organic forms, regular Irregular horizontal	Large/vertical, geometric Long linear, cylindrical
<b>Line</b>	Straight and rugged, (foreground) Undulation, angular/jagged, horizontal (background)	Regular, vertical to horizontal	Bold horizontal Straight vertical
<b>Color</b>	Brown, tan	Olive, grey-green	Light beige
<b>Texture</b>	Fine	Medium	Smooth/fine

### Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
<b>Elements</b>	<b>Form</b>			X					X		X		
	<b>Line</b>			X					X		X		
	<b>Color</b>			X					X				X
	<b>Texture</b>			X					X				X

**Does project design meet visual resource management objectives?**

**Additional mitigating measures recommended?**

**Evaluators Names:**  
Lori Tuchman, Marc Schwartz

<b>Date: June 11, 2009</b>
<b>District: Southern Nevada</b>
<b>Resource Area: Jean/Roach Lake SRM</b>
<b>Activity (program): Recovered Energy Generation Plant</b>

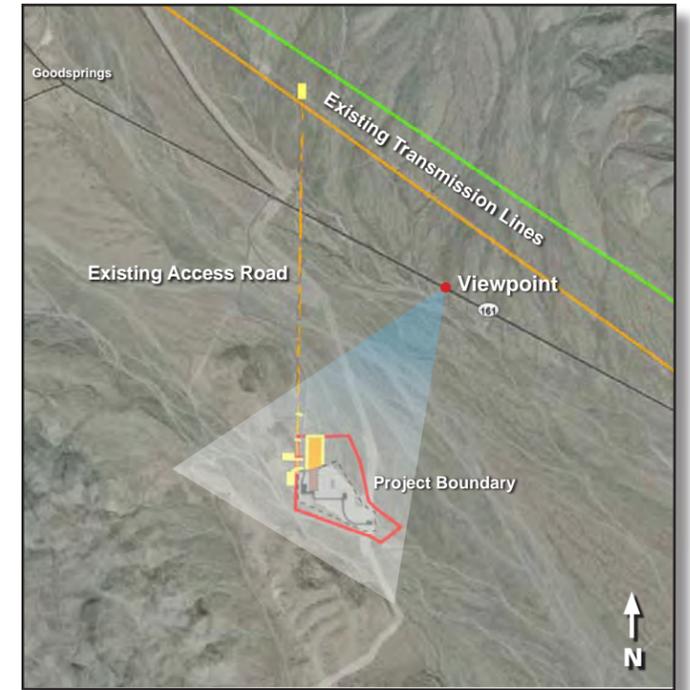


*Southwest View from Sandy Valley Road*

Moderate to weak contrast is created by project construction of a modified setting in class II landscape. Contrasts are anticipated to occur when project construction is completed. Structure form and line are the driving elements for the proposed project contrast. The proposed structure is to match the color of the existing structures. The construction of the project will remove existing vegetation creating a horizontal contrast similar to the existing facility but at a smaller scale. Overall visual impacts are anticipated to be low from this point of view.



**Existing Condition** - Kern River Compressor station as seen from State Route 161 traveling northwest towards Goodsprings.

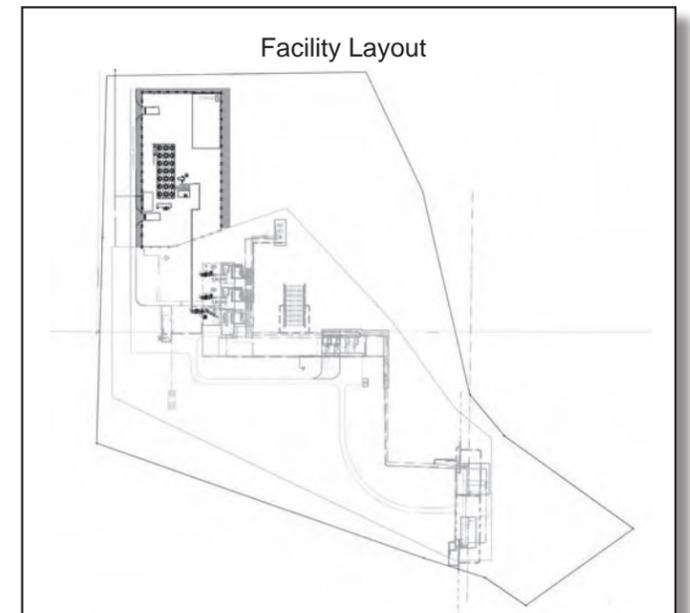


**Photo Location:** Viewpoint located on State Route 161 looking southwest towards Goodsprings Energy Recovery Station.

**Simulation Details**  
**Date:** 5-15-09  
**Time:** 9:06 a.m.  
**Focal Length:** 50mm  
**Atmospheric Conditions:** Sunny



**Simulated Condition** - Proposed Goodsprings Energy Recovery project including air-cooled condenser, 3 waste heat oil heater stacks, and ancillary facilities.



**NV Energy - Goodsprings Energy Recovery Station EA Simulation 1**